The Builder.

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Pulpit, San Miniato, Florence.....Drawn by Mr. Lionel U. Grace.
Design for Torquay Municipal Offices.....By Messrs. Harris & Towse.
House at Massingham, Norfolk.....Messrs. Wimperis & Best, Architects.
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Mr. Holman Hunt and Pre-Raphaelitism.

IS it quite fair to the present generation to say, as Mr. Hunt does in the opening words of his preface—"Art is generally regarded as a light and irresponsible pursuit, entailing for its misuse no penalty to the artist or to the nation of which he is a citizen"? Among fairly intelligent persons at the present day, we think it is understood that art is a pursuit requiring very arduous study, and which is serious in its aims, and a person who maintained the contrary would be thought uneducated. The indictment was no doubt true when Mr. Hunt's career began, but English society has learned something since then. The words however furnish in a way the keynote of the book, which is a record of serious study, one might say struggle, after the attainment of an artist's ideals. A second question is, why was it entitled "Pre-Raphaelitism and the Pre-Raphaelite Brotherhood"? One object of the author, we gather, was to remove some popular misconceptions as to the real origin and the real aims of the Pre-Raphaelite Brotherhood, and in particular to upset what were supposed to be Rossetti's claims to have been the founder of the sect; in regard to which it may at once be said that whether or not Rossetti was the initiator of the movement, his pictures (all but the earliest) show conclusively that he very soon deserted its standard. But though this subject occupies a few pages here and there, in rather a desultory manner, the book is essentially the autobiography of a painter, and in that sense a most interesting one, as the record of the life-work of one with whom art was nothing if not serious, and who spared no labour and sacrifice to attain his ideals.

Considering the title of the book,* however, we may turn first to the chapter in which the subject is first formally introduced. It may be thought by some that Pre-Raphaelitism is "ancient history" now, but the movement left its mark on English painting too decisively to allow it to be forgotten, besides that it influenced the author of this book throughout the whole of his life's work. The first reference to the expression occurs in the previous chapter, where it seems to have been used in joke by a fellow student after Mr. Hunt and Millais had been, though not irreverently, condemning Raphael's "Transfiguration" "for its grandiose disregard of the simplicity of truth, the pompous posturing of the Apostles, and the unspiritual attitudinising of the Saviour," and agreed that this picture was a signal step in the decadence of Italian art; to which their companions replied, "Then you are Pre-Raphaelite. Millais and I laughingly agreed that the designation must be accepted." But, as it is explained in the following chapter, Pre-Raphaelitism is not Pre-Raphaelism. Raphael in his prime was an artist of the most independent and daring course as to conventions." The author's view is that the prodigality of Raphael's productiveness, and his training of many assistants, compelled him to lay down rules and manners of work, and his followers accentuated his poses into postures.

> "They caricatured the turns of his heads and the lines of his limbs, so that figures were drawn in patterns; they twisted companies of men into pyramids, and placed them like pieces on the chess-board of the foreground. The master himself, at the last, was not exempt from furnishing examples of such conventionalities. Whoever were the transgressors, the artists who thus servilely travestied this prince of painters at his prime were Raphaelites. And although certain rare geniuses since then have dared to burst the fetters forged in Raphael's decline, I here venture to repeat, what we said in the days of our youth, that the traditions that went on through the Bolognese Academy, which were introduced at the foundation of all later schools and enforced by Le Brun, Du Fresnoy, Raphael Mengs, and Sir Joshua Reynolds, to our own time, were lethal in their influence, tending to stifle the breath of design. The name Pre-Raphaelite excludes the influence of such corrupters of perfection, even though Raphael, by reason of some of his works, be in the list, while it accepts that of his more sincere forerunners."

The object of the Pre-Raphaelite Brotherhood was to get behind this conventional posturing and to base everything on the study of Nature; and hence Mr. Hunt says he objected to the habit Rossetti had contracted of speaking of their new principles of art as "Early Christian." There was not to be, in his opinion, any profession of antiquarianism; the principle was to go to the study of nature instead of adopting classical conventionalisms. It was on this head that the Brotherhood considered that they were persistently misunderstood and misrepresented in the press; they were taunted with taking their models

* "Pre-Raphaelitism and the Pre-Raphaelite Brotherhood." By W. Holman Hunt, O.M., D.C.L. London: Macmillan & Co. 1905.

in art from a period when execution was imperfect, and were told that the greatest and best teachers were those who painted when the mastery of the technique of art was complete. The criticism was true in the abstract; it was absolutely misapplied with regard to much at all events of the work of the Brotherhood. The odd thing is that Rossetti's "Annunciation," one of the few Pre-Raphaelite pictures which received favourable notice from the first, really did give countenance to this view, and is a picture which might justly be considered to represent, in Rossetti's own words, "early Christian art"; it has the *naïveté* and childlike character of that art, both in its conception and in its rather stiff drawing. Millais' "Isabella" and "Christ in the House of his Parents," on the other hand (as we can all see now), had nothing whatever to do with either early Christian art or immature technique; they were works of a master in drawing; their sin, to the critics of the time was, that they represented a simple naturalistic treatment, figures just as they might be in every-day life, of a class of subjects which that generation had been accustomed to see treated in a conventional manner of composition. The "Isabella" especially was the result of an endeavour to show the characters, costumes, and expressions of the dinner company as they might have been in reality. It can still be seen to be a little too flat in its aërial perspective, the background figures come up to the front plane a little too much, in a way in which Millais would not have painted them in later life; a result of the desire to neglect nothing, to make every figure a complete study; for it was against slackness of execution that the Brotherhood also took up arms, and not without good reason. Millais' "Christ in the Home of his Parents," as it is now called, is also a picture entirely free from antiquarianism; it represents the best possible execution of a painter who was to become, if he was not already, the greatest of his day; it is one of his works now most admired by artists especially, who can fully understand the technical mastery displayed in it; that it is "Pre-Raphaelite" in the sense of resembling the works of Raphael's predecessors there is not a pretence for maintaining. But no production of the Brotherhood excited such fierce outcries as this picture. It was stigmatised as "mean, odious, and revolting." It is surprising that even those who were supposed to be art-critics do not appear to have recognised its beautiful technique. But from another point of view the outcry against it was not only not so surprising, it was not without reason. The original title, "Wounded in the House of my Friends," had probably a good deal to do with this. It was felt that the painter had taken a poetical and symbolical sentence from one of the prophets, supposed by the biblical criticism of the day to refer to Christ, and had reduced it to the plain prose of an accident with a carpenter's tool. There was reason in the outcry, though it was expressed in too violent language. A great ideal had been reduced to the most matter-of-fact prose of every-day life. Even now, with the more sober title which does not appeal to an ideal, does it add anything to our conception of the childhood of Christ? It is a beautifully composed and executed *genre* picture, with a little touch of domestic pathos in it; that is all. And this consideration touches on the whole question of the pictorial treatment of the story of Christianity. Ruskin was contemptuous about the unreality of Raphael's picture of "Christ's Charge to Peter," and its total want of agreement with the facts of the fishermen's life of the apostles. The answer is that the subject was regarded by Raphael as one which had become a great symbolical church legend, and he treated it symbolically, and made it thereby a greater and more elevated subject for painting than it could ever have been if treated realistically. Millais, by his picture, coupled with its original title, flew in the face of the whole religious feeling of his day, which regarded the life of Christ as a sacred mystery; he reduced it from the ideal to the commonplace (as far as the conception of his picture went); and the outcry against it, from that point of view, was not by any means so unreasonable as the painter and his friends supposed.

The point is of importance in connexion with the work of Mr. Hunt in his search in the Holy Land for materials for realising the life of Christ in painting, which is described in so picturesque a manner and is such interesting reading. No one can feel anything but respect, almost reverence, for a painter who took his art in so serious and thorough a spirit as to undergo all the discomforts which he subjected himself to in the effort to obtain studies which would render his work more perfect according to the ideal he had before him; not only discomforts, but on several occasions serious danger of violent death at the hands of lawless Arabs and other marauders of the waste—dangers only escaped on one or two occasions by his own resource, courage, and coolness. To say that this portion of his autobiography has all the interest of a novel is, in fact, to pay rather too high a compliment to the ordinary run of novels. At a time when pictures are supposed too often to be things to be dashed off under a facile inspiration of "impression," this self-sacrifice and labour to achieve perfection and truth is a quality to be held up to admiration as an example to younger artists. Paintings worked at in this spirit are likely to live, for their technical qualities at all events; and time is not wasted in obtaining realism of surroundings and local colour; they are so much help towards truth of effect. The note of questioning comes in when we think, not of the accessories but of the main object of the painter. Mr. Hunt wished, in a thoroughly earnest and reverent spirit—of that there can be no kind of doubt—to make his art a medium for bringing the life of Christ more fully home to us. The correctness of the surroundings assists towards this, no doubt; but the main thing after all is the conception of the sacred personage in the story; and for that what is needed is not realism but imagination. To find a Syrian model and paint him with the most careful realism helps us little. Does the principal figure in "The Shadow of the Cross" help us in any way towards a perception of the personality of Christ? Surely not; we should be inclined to add, we hope not. The real beauty of that picture is the figure of the kneeling woman, so admirable in its lines; but it is the only element of beauty in the picture; and then the symbolism of the shadow, and still more that of the "instruments of the passion," as they are called in ecclesiological language—represented by the tools hanging on the wall, is (if we may be pardoned for saying so) such a poor and puerile kind of symbolism, so far inferior in its nature to the abstract symbolism of Raphael's "Charge to Peter" before referred to. Fortunately there are otner and more satisfactory results from Mr. Hunt's labours in Palestine; the "Finding in the Temple" is a masterpiece, but it is so not on account of any probability that the figure portrayed resembles what the youthful Christ may have been, but because of the masterly drawing, composition, and character of the central group; it is a successful and powerful work of art, and "The Shadow of the Cross," whatever its religious intention, is not.

It is singular to consider, in contrast with these efforts after realism, that what has been certainly Mr. Hunt's most popular religious picture, "The Light of the World," is a purely symbolic one; though here again some part of the symbolism—*i.e.*, the different shapes of the openings in the lantern, which (so we are told) are to suggest that spiritual light comes into the world in different shapes though from the same source—is of a rather childish order; and what is the artistic value of a symbolism that requires explaining? The text which has been popularly attached to the picture, "Behold, I stand at the door and knock," which it is understood that the painter did not intend, and objected to, really gave the picture a much broader and better symbolism than the rather far-fetched one of the lantern. One great value of the original picture, the unhappy destruction of which through carelessness is described in the book, was in its remarkable colour; the robe of the figure especially was one of those inspirations in colour which it is impossible to define in words. In its religious aspect we have always thought the work over-rated, and still more do we think so of "The Scapegoat," a most remarkable piece of painting, especially in the distant hills; as a picture of desolation it is admirable; but the popular ideas as to its spiritual significance are only suitable to amuse children with.*

As far as we can gather, it would appear that Mr. Hunt means us to understand that he more than any one else was the real originator of the Pre-Raphaelite movement, or he and Millais together, and that Rossetti was more an adherent than an originator. It is certain at all events that Rossetti very soon abandoned their principles of painting, and that Mr. Hunt is the only painter of note who has adhered to it resolutely throughout his career; so

* Last time we saw the picture exhibited (somewhere in Bond-street), we noticed with some surprise, in the case of a painter usually so accurate in detail, that the markings on the face of the moon are not represented correctly, and appear to be carelessly put in. It makes no difference to the picture, of course, as a whole, but we were surprised to find this detail neglected.

that he furnishes to some extent a kind of test as to the permanent value of those principles in their influence on painting. One regards the result with rather mingled feelings. He is undoubtedly a great painter; the question is whether he would not have been a greater one had he somewhat relaxed the severity of the early Brotherhood tenets or practice. On the one hand painting of such conscientious and thorough finish must always have its value on that account, and can never appear commonplace; on the other hand the expression of his subject is often marred by the hardness and want of balance arising from the effort to paint up everything to the same standard of finish. "The Awakened Conscience," for instance, is a powerful work in its main expression, and would in any case always compel interest from its extraordinary minuteness of realism of detail; but it can never be a pleasing picture; it is too hard and violent; every detail seems to fly in your face; the colour is harsh and inharmonious; and the design really looks much more attractive in a small black-and-white reproduction than in the "original" picture. In "Valentine and Silvia" there is real dramatic power, as also in "Claudio and Isabella"; the hardness of detail is less insistent in these, and they are admirable renderings of Shakespeare. The "Strayed Sheep" is a jewel of execution which will be the pride of one collection or another as long as it lasts; and Mr. Hunt's pictures are so thoroughly painted and with such knowledge of his materials that they may be expected to last for centuries. Among his larger pictures it is pleasant to feel that the last one completed, "The Lady of Shalott," is perhaps the finest thing he has ever done; the detail, though exhaustively studied and full of meaning and interest, is not so fiercely insistent as in some of his earlier works, and the principal figure is beautiful and fully dominates the whole; it is a really great picture both in conception and execution.

Among the many interesting points to be noted in what, as we have said, is really an autobiography, one is the catholicity of Mr. Hunt's recognition of the merits of painters quite outside of the movement with which he was specially associated; a catholicity which contrasts agreeably with the narrow prejudices and jealousies of Rossetti, of which many examples turn up in the course of the book. Mr. Hunt can recognise fully what was noble and great in poor Haydon's aspirations and efforts. It was to Haydon, he says, that we owed the retention in our country of the Elgin marbles, and the Government invitation to English artists to compete in the decoration of the Houses of Parliament; it was he who originated the idea of the establishment of Schools of Design to improve the deteriorated taste of our manufactures; "yet he received no sort of recompense or reward, though rewards were given to his adversaries." He has words of appreciation for what was admirable in the work of Landseer, Etty, Leslie, and Maclise, artists so far removed from himself in principles and practice; and he praises (justly) the quality of "good common-sense" in Ward's "Dr. Johnson at Lord Chesterfield's." "Many of the Royal Academy Associates of the time," Mr. Hunt observes, "have fallen into unmerited disregard, although their ingenuity in invention will not fail to be observed and appreciated when some of the travesties of art at present in vogue have been condemned as wearisome folly." These are much larger and more tolerant views than we have been accustomed to associate with the fellowship of the P-R. B., and we are heartily glad to find them put on record here. Of Mr. Hunt's life-long friend Millais there is much in the book that is of the greatest interest as to his personality and his ideas on art. It is noted of Millais as a youth, that "he dressed with exact conventionality so as to avoid in any degree courting attention as a genius"; it would seem that Millais all his life was a gentleman first and a painter afterwards; he had no sympathy with Bohemianism. In the second volume there is a long record of a curiously frank declaration by Millais, late in his life, in defence of the changes in his own art. He did not agree with those who told him that if he painted for the passing fashion his reputation would be the less some centuries hence than if he painted more ambitious subjects of his own choosing. "A painter," he said, "must work for the taste of his own day. How does he know what people will like two or three hundred years hence? I maintain that a man should hold up the mirror to his own times. I want proof that the people of my day enjoy my work, and how can I get this better than by finding people willing to give me money for my productions, and that I win honours from contemporaries? What good will recognition of my labours hundreds of years hence do me? . . . . Let the artists of the future work for the future, they will see what's wanted." And on another page—"Why, I have just sold a picture done in two weeks which will pay the expenses of all my family, my shooting and fishing too, for our whole time in Scotland." Dreadful, isn't it? But it was pretty much on the same principle that Titian worked, and does not seem to have wrecked himself with posterity. All this is given by Mr. Hunt without a protest; he obviously thought (and quite rightly) that any opinion of Millais on art was worth something to the world; and whether we agree with it or not, we are very glad to have it; it is the good, honest, healthy opinion of one who, both as man and artist, was healthy to the backbone.

Some expressions of opinion on the French art of fifty years ago, in the account of the author's visit to Paris with Rossetti, are of considerable interest. Delacroix was then the master most in vogue, but Mr. Hunt did not like him, and after years confirmed his impression. Flandrin's paintings in the Church of St. Germain des Prés he notes as admirable for their complete fulfilment of their artist's purpose; Ingres's "La Source" as a great picture notwithstanding its deadness of colour; of Millet he says that "the defect of grace in the figures he portrayed much marred the perfection of many of his designs," a judgment which will probably be the ultimately accepted one. More interesting for the present moment is the author's summary, in the final chapter, of his opinions on Impressionists and Impressionism, and his indignant contempt for the noisy and almost obscene Bohemianism of some of the younger generation of French artists. "In England, whatever misleading spirit has exercised itself, no such corrupting influence has hitherto been poisoning the art-students' ideals." As to Impressionism as representing a paramount end in art, we may quote the following:—

> "Many of the works classified by the public as Impressionist have no evidence of sober common sense; they are without perspective, correct form, or any signs of patient drilling and scholarship. They suggest suspicion that the workman never duly submitted himself to persistent tuition or patient practice, and not seldom on inquiry it will be found that he took up the pursuit of art so late in life as to prove that he had no natural call from her; and he covers his inability to conquer the besetting sins, which every tyro must eradicate from his uncultivated disposition, by fine names and theories."

And he concludes that such work is "a standing peril to honest and honourable art."

We have only been able to touch on a few of the points in a book which is full of interest to everyone interested in art, and which no one, whatever his views on the objects and principles of painting, can well lay down without a feeling of respect and gratitude to its author.

NOTES.

The Panama Canal.

For years past controversy has raged around the question of the Panama Canal. Many schemes have been brought forward since the project of the French engineers was first formulated, but, speaking generally, all of these come into one of two categories, according as they provide for a sea-level or a lock canal. In itself a sea-level waterway is certainly preferable for very evident reasons, and the difference of level existing in the Atlantic and Pacific oceans does not present any practical difficulty. The chief objections to a canal of this kind are the heavy cost and the length of time required for construction. Americans are particularly anxious that the canal should be completed at the earliest possible moment and at the least possible cost. Consequently it is not surprising to learn that the recommendation of the International Commission in favour of a sea-level project has been virtually set aside by a second commission of American engineers appointed by Mr. Roosevelt. We do not yet know which of the several lock-canal schemes will be adopted. The decision of this point is a matter of some importance, as the merits of the projects vary to a considerable extent and their essential features differ with regard to the exact route to be followed, the height of summit level, the character of impounding dams for water supply, capital expenditure, and time for construction. The most recent proposals were those of Mr. Lindon Bates, which have already been briefly described in our columns, and as these were accompanied by a definite offer to construct the canal at a lower cost and in less time than would be possible under other published schemes, it is probable they will form the subject of careful inquiry.

The International Congress of Architects.

IN connexion with the Seventh International Congress of Architects, to be held in the Grafton Galleries, London, in July next, there will be a chronological exhibition of English architecture from the Norman conquest to the death of Sir Charles Barry in 1860. In addition there will be shown a collection of oil-paintings and water-colour drawings by known painters, which treat of architectural subjects. Many of these are scattered throughout the country in private collections. It is hoped that all those who know the whereabouts in private collections of any such paintings or drawings will communicate with the secretary of the executive committee, the Institute of British Architects, 9, Conduit-street, London. Such an exhibition of purely British work should be made as representative as possible, in view of the forthcoming visit of numerous foreign architects.

British School at Athens.

WE may draw the attention of our readers to the proposal of the British School at Athens, announced in a letter to the *Times* of Tuesday last by Mr. G. A. Macmillan, to undertake a systematic survey and archæological exploration of the site of ancient Sparta. Excavations are to be made to ascertain the existence and extent of remains, their character and state of preservation, and what prospects are held out for excavation on a larger scale. Attention will be given also to the remains of the Frankish and Byzantine periods, which are numerous in the province of Laconia, and this portion of the work will be put under the direction of an architect, Mr. Ramsay Traquair, of Edinburgh. Funds are required to assist the management of the British School in this undertaking, which is on new ground, and may turn out to be of the greatest value and interest. We hope that those of our readers who can afford to contribute anything in assisting such a work will keep it in mind.

Powers of Tramway Authorities.

A POINT of considerable importance has been decided in connexion with municipal tramways in the case of The Attorney-General *v.* The Lord Mayor etc., of the City of Manchester. The Municipality last April announced their arrangements for the conveyance of parcels and traffic from Manchester to all parts of the United Kingdom and abroad, and for acting as agents to the railway companies, and the action was brought on the relation of a ratepayer to restrain them from so doing, on the ground that it was in excess of their Parliamentary and other powers. The Court, after a very careful consideration of the question, came to the conclusion that the Corporation has power to convey and to deliver parcels and goods on their systems, even employing horses and carts in the delivery, but that it must be restricted to goods which travel or are conveyed along some part at least of the tramway system, that is to say, it must be incidental, or accessory to the tramway undertaking, and not carrier's business independent of it, as long as an expenditure of the borough funds is involved in carrying it out. The same limitation applies to the Corporation acting as railway agents. This question of goods traffic on tramways is one likely to be heard more of in the future, and it would appear desirable that some limit should be placed on the powers of municipalities in this direction. As long as tramways occupy the public thoroughfares it is obvious that their freights should be limited to passengers, and that goods traffic is entirely unsuitable. It not only would obstruct the roads, but would seriously injure house property abutting on those thoroughfares.

Purchase of Building Land.

IN Holliwell *v.* Seacombe a small point of interest to purchasers of real property has recently been decided in the Chancery Division. A certain property was sold by auction under an order of the Court, and one of the lots which was described as building land ripe for development was bid for by the applicant in this case. When the abstract was delivered it was discovered that in 1887 the land had been conveyed to one of the vendor's predecessors in title subject to a covenant that only almshouses should be erected on the land. The purchaser then applied to the Court to be discharged from the purchase and for a return of the deposit, and for the costs incurred in bidding and in investigating the title. The vendor subsequently obtained leave to rescind the contract under clause 7 of the conditions of sale, which provided that when a contract was rescinded the deposit was to be accepted in discharge of all claims, but without prejudice to the rights of the purchaser. The Court held that in sales under the direction of the Court when the purchaser is entitled to be discharged from the contract, the condition as to rescission does not affect his rights, and he is entitled to the costs and expenses which he has incurred. Here there was misrepresentation which entitled the purchaser to be discharged from the contract.

Fires in Public Conveyances.

IT is by no means reassuring to hear of occasional fires in tubular railways, where passengers have very little opportunity of escaping from the immediate neighbourhood of flames and smoke, and, even if they are able to get upon the permanent way, can only walk thereon at the risk of their lives. The fire which took place last Thursday week in a train on the City and South London Railway comes as one more hint that the use of non-combustible railway carriages ought to be made compulsory, especially on all underground lines. We are very glad to be able to mention that the Board of Trade have already framed a model set of by-laws with which promoters of new tubular railways will have to comply. But there must also be stringent regulations with respect to existing undertakings of the same kind. We have repeatedly pointed to the necessity for the adoption of fire-resisting carriages on open-air railways, and the recent fires on motor omnibuses show that these vehicles, too, ought to be of fire-resisting construction. It is absurd that any motor omnibus carrying a quantity of highly inflammable spirit should be provided with a wooden body, and in these times of enlightenment we really cannot understand why any vehicle so built should have been licensed as a public conveyance. If the authorities have no discretionary powers as matters stand, it is to be hoped that the new Parliament will rectify the deficiency at the earliest possible moment.

"Quiet Enjoyment."

THE case of Williams *v.* Gabriel (Current Law Reports) is one of importance to lessees of house property. The plaintiffs were lessees of certain portions of a large block of buildings on a lease for twenty-one years terminable at the lessees' option at the seventh or fourteenth year, and the lease contained the usual covenant for "quiet enjoyment." During the currency of this lease some portion of the buildings became out of repair, and an order was made by the County Council under the London Building Acts, ordering the structure to be taken down. The lessor had assigned his reversion in the whole of the buildings, and this operation was being undertaken by the persons on whom the reversion had devolved. The lessee's part of the premises became exposed, and he was compelled to vacate the premises, and he proceeded against the executors of the lessor, who had died, for breach of the covenant for quiet enjoyment. The Court held that there had been an interruption, but held that the plaintiff could not recover, since the acts complained of were not such that the reversioner had the right to do as claiming under the lessor. This is an important limitation on the covenant, as it becomes limited to those acts which can have been contemplated by the lessor, and it does not extend to wrongful or negligent acts on the part of the person to whom the property has been assigned. This raises a serious question since it seems to leave a lessee in a far worse position than he would be in if the property remained in the possession of his lessor.

Destructor By-Products.

ALTHOUGH the use of the refuse destructor has been forced upon public authorities as a sanitary necessity by the exigencies of modern social conditions, the residual products possess distinct value as materials of construction, and there are other by-products which can be employed so as to reduce the cost of refuse disposal. At the meeting of the Civil and Mechanical Engineers' Society last Thursday week Mr. F. L. Watson summarised in a useful manner the various directions in which destructor by-products can be utilised, and gave some data relative to the residual products of combustion in furnaces of the kind. The first by-product is obviously heated gas, which is available for drying sewage sludge or other materials, and is largely used in the generation of steam for driving mechanical and electrical machinery, and for heating water to be employed in baths and washhouses. It is worthy of note that the real difficulty in connexion with the utilisation of steam generated at a destructor station is not fluctuation of the supply but irregularity of the demand. For this

reason the most remunerative results can be obtained in places where the generation of electricity is not the only outlet for steam produced by waste heat from the furnaces. Clinker is the chief residual product, whose uses in the manufacture of mortar and concrete flags are already familiar to our readers. Mr. Watson pointed out that the purpose appearing to offer the greatest profit was in making bricks on the system patented by Dr. Schulthess, of Paris. The weight of clinker-lime bricks so made was stated at about three tons per 1,000, and from tests made by Professor Goodman at Leeds University the crushing strength appears to range from 110 tons to 185 tons per square foot. Flue dust is another residual product which finds some use in plastering work and also as a basis for disinfecting powder. Notwithstanding the usefulness of such by-products the authorities owning destructor plants are not always able to sell or to use them so fully as could be wished. The paper to which we refer may be of some service in directing attention to the suitability of the residual products n construction.

Cheddar Cliffs. THE enormous fall of rock from the face of the Cheddar Cliffs, variously estimated at from 70,000 tons to 500,000 tons, should at last arouse the local authorities to the necessity of taking action with the view of curbing the anxiety of quarry owners to destroy this famous landmark. At the same time we are by no means certain that the recent fall is entirely due to quarrying operations. There have been heavy falls of chalk in the neighbourhood of Dover quite lately, where nothing but natural causes can be held responsible. Nevertheless, while the mischief wrought at Cheddar may be chiefly the result of climatic influences, it is highly probable that quarrying has had a large share in the disaster by establishing conditions distinctly favourable to disintegration of the rocks by natural agencies.

Christ Church, Down-street, Mayfair. THE fire which broke out at an early hour of the morning of January 31 speedily destroyed the interior of the church, and the greater part of the roof, which was lined with match-boarding and covered with felt. Captain Hamilton's official report states that the fire was caused by "overheat of the furnace flue." It appears that the fire originated in the north-west corner of the building, over the grating above the furnace of the hot-air apparatus which had been lighted on the night before in readiness for a mid-day service upon the next day. The pecuniary loss is computed at 20,000*l*., but the fabric and its contents had been insured in the Ecclesiastical Office. The church, which stands at the corner of Down and Brick streets, was built in 1864-5 after Francis's designs in the Early English style, upon a three-sided site, the walls being of granite and the plan embracing a nave with a small north transept. It contained sittings for a congregation of about 650 persons, and was enlarged in 1872, when it was fitted with an organ built by Bevington. The vestry, with the Communion plate, records, and registers, have escaped uninjured, but the organ and the stained glass in the east window above the altar are damaged beyond repair. The window, which represents the scene of the Crucifixion, was set up, at a cost of 1,000*l*., as a memorial by members of the Hope family of Deepdene, Dorking. In October of last year a window was inserted in the north wall in memory of the late J. T. Wimperis, architect, by his sisters—the glass was executed by Messrs. Bell & Beckham. Christ Church narrowly escaped from a fire on the morning of February 26 last year, when it suffered damage to the extent of nearly 700*l*.

The Art-Union of London. WE have received a print of the plate issued this year to subscribers to the Art-Union of London, which is an etching by Mr. W. L. Wyllie from his large painting "Trafalgar," exhibited at the Royal Academy last year. We have in many cases objected to the large size and sometimes rather coarse execution of the engravings or etchings annually issued by the Art-Union, the tendency of which was to encourage the un-taught in art in the idea that a work in black and white was valuable in proportion to its size. In the present case, however, one feels that the amount of detail in the picture, in which there are no large-scale figures, could hardly have been done justice to on a smaller scale, and the etching moreover is the handiwork of the painter himself, and not of a copyist. Trafalgar, too, is so momentous an event in modern English history that a large etching commemorative of it is a fitting trophy to frame and hang up in any English household; and it is in this sense rendered more valuable by the short account of the battle written by the artist, who of course entered into every investigation before painting the picture, and who, from his pictures and other writings is no doubt enough of a practical sailor to understand the position and the contemporary accounts of the engagement. As an etching it is a very fine production, full of suggestion of colour and atmosphere.

The Dowdeswell Gallery. AT Messrs. Dowdeswell's Gallery is a collection of landscapes—a good many of which might be rather termed studies and sketches for landscapes—by Mr. Grosvenor Thomas. Such sketches as "Waves Breaking" (2) and "A Grey Sea" (32) are rather what might be called artist's memoranda than works for exhibition; they are among other examples that we have seen lately of an inclination to treat the sea rather as a subject for experimental sketches than for serious painting. The majority of the works, however, are landscapes, some of the smaller ones very sketchy, but containing fine suggestions of composition and effect; and among the more important works, such as "The Canal" (12), "The River" (24), and "Morning" (30), we may conclude that as much detail is given as the artist thinks compatible with the breadth of effect, and the indication of the poetry of the scene, which are his chief aims; and after all there is as much detail in these as in many of Constable's works. There are various principles of translating landscape, and this is one of them, though perhaps the tendency to treat landscape as composition in masses of tone, with an ignoring of detail, may be carried too far. However, "Morning," is an unquestionably fine landscape, and "The River" also, though rather too shadowy in treatment. Among the smaller works may be noticed especially "Landscape" (13), a vertical composition with masses of dark trees; "Sketch for Morning" (18); "Sunset" (21); "Marigolds" (23), a fine bit of colour and texture; and "Landscape" (31). In "The Canal," before referred to, the reflection of the light in the house window, considering the apparent distance of the house from the water, could not be seen as low down as it is shown on the water, unless the eye were supposed to be at the water level; a kind of oversight often made in painting. It is a simple question of angles, easily demonstratable by a sectional diagram. The reflection of the light in this case, if seen at all in the water, would be close up under the bank. Painters would do well to study, on this subject, Sir Montagu Pollock's valuable book on "Light and Water" (reviewed in our issue of July 23, 1904).

The Baillie Gallery. AT the Baillie Gallery, in Baker-street, are two collections of pictures; water-colours by Mr. Oliver Hall, and an exhibition of paintings by what is called "The Liverpool School of Painters." Mr. Hall's water-colours are mostly slight in execution—sketches rather than pictures, but are masterly in their sense of composition and distances in landscape. Among those especially good are "Tower Farm" (101), "Waste Land, Cumberland" (108); "Spring" (113); "Uplands near Silloth" (114); "Along the Shore towards Silloth" (114); and a powerful foreground picture of old ruins, under the title "Abbey in North Wales" (99). As to the "Liverpool School," there is no such thing, as indeed is almost admitted in the first sentence of the preface to the catalogue; but there were, during the middle portion of the last century, several exceedingly clever artists natives of Liverpool (only two of whom, W. Davis and J. W. Oakes, can be said to have obtained a general reputation), whose aims and practice were, however, as different as possible, and who therefore could not possibly be grouped as a "school." Oakes, who moved to London and became an associate of the Royal Academy, is not represented here by his best work, though there are some good small pictures by him. William Huggins, who in his lifetime had no reputation beyond his own neighbourhood, was really one of the finest animal painters of England, as no one can question who looks at his "Cattle Drinking," No. 23 in this collection, which in its way is unsurpassable, and his brilliant paintings of fowls (7 and 11). W. Davis was a landscape painter allied to the pre-Raphaelite school, and produced some most beautiful works in a careful and highly finished manner, but was surpassed in original

genius by Tonge, who belonged to a rather earlier period (1822—1855). Tonge was a most powerful and original landscape artist; his large picture here, "Ormskirk" (53) is worthy of De Wint, whom it a good deal recalls. He made many fine water-colour studies of landscape treated on rough brown or grey paper in a manner of his own; there are no examples of them in this collection, but they were known to and prized by those acquainted with his work. Even in his own neighbourhood, however, Tonge never had a reputation except among a limited circle of amateurs who understood his merits, which were not for the popular taste of that period. Had he lived now, when landscape painting is somewhat better understood; he would have made a reputation. The proprietor of the Baillie Gallery has done well to collect some of these works of little-known painters of genius, which should not be overlooked by those who are interested in painting.

Photographs by Mr. Langdon Coburn.

At the Royal Photographic Society's House in Russell-square is a collection of photographs by Mr. A. Langdon Coburn, one of the photographers who seeks to use photography as a means of producing artistic effect and not for mere mechanical reproduction. This is nothing new of course; Mrs. Cameron started it long ago, and her pictorial effect in portraits has not been surpassed, if equalled, since. Many of Mr. Coburn's portraits are very successful in giving character and avoiding hardness; the portrait of a lady smiling for instance (9); another of a lady (19) in which a charming *espièglerie* of expression has been caught and fixed; those of Mr. Hedley Fitton, Mr. Dobson, Mr. Mark Twain among others; the last named is excellent. In photographs of architecture, as in most of the Roman subjects, the want of sharp definition may be thought picturesque, but it does away with one of the chief values of photography in connexion with architecture—the power of giving clear definition of detail. Some of the photographs of bits of old streets, etc., make very effective pictures, and are well chosen as composition; though in one of the best of these "Via Fonte Marcella, Assisi" (95), with the figure in the foreground, the old houses in the rear ought to stand out much more sharply in the strong sunlight than these do. That is the difficulty in these artistic applications of photography; what suits one portion of a scene does not suit another: a painter has the matter in his own hands.

The late Mr. J. P. Seddon.

We record with great regret the death of Mr. J. P. Seddon, an architect of genius who never had a full opportunity of doing justice to what was in him. The remark of the Hon. Secretary of the Institute of Architects, that Seddon was a follower of Pugin, is a misconception; he was an architect of much wider and more original ideas than Pugin; he treated Gothic in his own way, not according to precedent. Though not an actual "P.R.B," Mr. Seddon was closely associated with the Brethren, and was for some time an intimate friend and co-worker with Rossetti. Though he carried out many minor buildings (a list of which will be found in our Obituary column), his only executed building on a large scale that we know of was his picturesque Aberystwith Hotel, never finished, and afterwards turned into a college. He was one of the twelve invited competitors for the Law Courts, and his wildly picturesque design had a great deal more practical character than appeared at first sight: the conception for a great London Record Tower was a grand one, and a more remarkable idea than anything embodied in the present Law Courts.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

An ordinary general meeting of the Royal Institute of British Architects was held on Monday, at No. 9, Conduit-street, Regent-street, W., Mr. John Belcher, A.R.A., President, in the chair.

The minutes having been taken as read, Count Plunkett, Hon. Associate, was admitted for the first time since his election.

The Late Mr. Seddon.

Mr. Alex. Graham, hon. secretary, said he had to announce—and did so with great regret—the decease of an old and distinguished member of the Institute, who was known to nearly all of them, and who had left behind him a very pleasant memory—*i.e.*, John P. Seddon. The deceased was elected an Associate in 1852, a Fellow in 1860, and was for many years a member of the Institute Council, while, from 1862 to 1867, he acted as one of the hon. secretaries. Mr. Seddon, whose work was known to many of them, was one of those who followed strictly in the old Pugin school, and made a special study of mediæval architecture. They would all regret the departure from their midst of one who fought the battle of professional and artistic life with considerable success. They all sympathised with the widow and family, and he moved that a letter be sent to Mrs. Seddon sympathising with them in the great loss they had sustained, and recording, at the same time, the appreciation of the Institute of the work and merits of their deceased colleague.

The motion was agreed to in silence.

The Royal Gold Medal.

The Chairman announced that the Council had nominated Sir Lawrence Alma-Tadema, R.A., for the Institute Gold Medal this year.

Students' Drawings.

Mr. J. W. Simpson then read a criticism of the works of students submitted in the recent competition for prizes and studentships.

Mr. Simpson said that the duty laid upon him of criticising the students' work was an honourable one not to be lightly undertaken. It was evident that for criticism to be useful it must be sympathetic; unless the critic could divest himself of personal bias, and regard the work under review from the author's standpoint, he could neither appreciate how far it was successful in attaining the ideal of its creator nor usefully indicate in what respects it might be improved. It was of no help to a student struggling with an imperfectly expressed conception of a XIIIth century church, having a tower at the crossing, to advise him to adopt a plan based upon that of a Grecian temple, and employ a Systyle Doric Order. He must be led to an intelligent comparison of his own design with those of the great Gothic masters—to consider the proportions of his tower and the manner in which it would combine with the other features of his building. His mouldings must be criticised in relation to their positions in the work and their effect in emphasising its horizontal and vertical lines respectively; the voids and solids, the sky lines and projections, scrutinised in relation to the general mass and grouping under various aspects.

Before considering the work of the students he would venture a criticism upon that of the sub-committees who had reported upon the drawings submitted for the several prizes. It had been their duty to examine and discuss them in detail—a duty involving long and anxious consideration of the work of each candidate, and one which he knew by experience was fulfilled with the greatest care and thoroughness. The reports made to the Council by these committees were placed in his hands for the purposes of this paper, and he was struck by the fact that a great part of their labour was, in almost every case, lost to the Institute by reason of their referring only to those designs recommended to the Council for distinction. If the respective secretaries were instructed to embody in the reports some notes of their committee's views upon each design which was worthy of consideration the record would be of great value for the instruction and guidance of future competitors.

In regard to the Measured Drawings Medal, Mr. Simpson said:—"Messrs. Coombs and Poley well deserve their triumph, and the Council had great satisfaction in awarding the medal to each. The drawings of Christchurch are an excellent and beautiful rendering of a fine subject, and the value of such a study to its delineator is incalculable. . . . The choice of a subject is of great importance to the student who proposes to undertake its measurement, for the ultimate object of the enterprise is not the mere preparation of a set of drawings, but that intimate knowledge of and familiarity with the work which can be acquired only by a patient and detailed analysis. It is to this end that the Royal Institute encourages such studies by the offer of its medal. The opportunities which the architect-student has for dissecting the entire anatomy of an important edifice must be limited by the time at his disposal; and this time becomes, in the natural order of things, more and more difficult to obtain as the other duties of his life increase. Few of us can hope to achieve the complete description of more than one or two subjects of the first class before other claims compel us to restrict our studies to less elaborate memoranda of their essential points. We in Great Britain who desire (and who does not?) to acquaint ourselves with the subtle beauties of classic art are under the disadvantage of living remote from the great masterpieces of Greece and Rome. We must be content to study them at second-hand by means of books, or must spend time and money in travel that we may see them ourselves. But we have at our very doors a profusion of the most excellent Gothic work that the world can show, and I commend its study to you, not only as affording the finest possible technical exercise in draughtsmanship, but as tending to great flexibility and freedom in composition. I have troubled you with this disquisition because, in some cases, the subjects illustrated are quite unworthy of the time spent upon them; unless, indeed, as I hope may be the case, they have been measured for discerning patrons who desire the candidates to make 'alterations and additions.' The mechanical delineation of surfaces of brick wall and repetitions of sash-bars can never give the power that comes by attacking and mastering intricate and beautiful detail; and, though I yield to no one in my appreciation of the picturesque qualities of the Renaissance, I hold that, regarded as an aid to the study of classic architecture, it is somewhat worse than useless."

In regard to the Soane Medallion, it was the custom, and rightly so, to set great subjects in this competition as pegs for the students to hang their most magnificent ideas upon. Youth attacks heavy problems with a light heart, and Heaven forfend that "the Soane" should ever fall to a set of practicable working drawings. This year a most happy suggestion by Mr. Statham was adopted, and designs were invited for the realisation of the perfect palace described in Bacon's "de Ædificiis." The result was more than satisfactory, and the winner, Mr. W. S. George, had his hearty congratulations on his fine production. It was imagined in a properly grandiose vein, and executed in a way which indicated artistic qualities of a very high order. The "View" was especially meritorious, showing, as it did, a riotous fancy with an admirable sense of pictorial arrangement. This design was, he thought,

quite the most learned parody of style which they had had since his brilliant colleague on the Council, Professor Pite, startled them with his ideas as to what a West-end club should be like. Mr. Atkinson, who took second place, had sent a capital set, the plan and detail especially well conceived; but he had somewhat lost sight of that domestic quality which differentiates the palace from the public building. The effective and careful execution of the drawing merits special mention.

Next in order came the Owen Jones Studentship, for which the competition had been very keen. Mr. Gascoyne, who was successful in taking the 100 guineas for foreign travel, gave admirable and delicate renderings of Italian work. His water-colour interiors showed a good sense of the pictorial, though not without a certain inclination to a trick effect in lighting, which should be guarded against. Mr. Dawson had sent most meritorious drawings, which would have taken the studentship in any ordinary year. Mr. Davies had a remarkably beautiful set. The clean, straightforward drawing and legitimate effects of his sketches were admirable. There was to be remarked, however, a tendency to hot-brown tones in his collected work, which he had emphasised by the warm brown mounts he had adopted. A white or cool grey mount would have cleared and given transparency to his colour. Mr. Nicholson, too, another prize-winner, had not paid sufficient attention to his mounts, a point which it was a great mistake to neglect in a colour competition. Mr. Jackson, the third of the "bracketed second" men, had sent very careful and excellent colour studies of the Santuario at Soronno, and Santa Croce at Florence.

The "Pugin" drawings were in no way below the general standard of excellence. Mr. Drysdale took the silver medal and 40*l.* prize with delightful and effective sketches well worth study by other competitors. His detail was carefully and conscientiously given without unnecessary repetition. The rendering of Bishop Bridport's tomb, and the John Draper chantry screen at Christchurch were quite masterly. His combination of brown ink writing with pencil and colour drawing was very pleasant and characteristic; he had done a great deal of good work, and thoroughly earned the prize he had gained.

The Godwin Bursary was very worthily won by Mr. Inigo Triggs. The only doubt in the minds of the Council was whether the proposal of the author to study the "Laying out of Public Squares and Open Spaces" fell strictly within the terms of the trust deed. Their decision in the affirmative he had learned with relief.

For the "Tite" Certificate and 40*l.* there were no less than twenty-one competitors, the subject set being "An Open-air Swimming Bath." Mr. Horsnell was placed first with a really fine conception. His plan was thoroughly artistic, and the design was naturally and uneffectedly that of an enclosed space and not of a covered building. The pencil perspective was coarse, and did not adequately express the enclosing of the bath, and the ½-in. detail was unfinished. The merits of the design were so great that it was deservedly placed first; but he would warn future competitors that this success was not to be taken as a precedent for unstudentlike finish in their work. Mr. Pearson took a Medal of Merit for a vigorous and good attempt to deal with a difficult elliptic motive. His outer colonnade, though effective, required more thoughtful planning to justify it, and the entrance blocks occurred too abruptly, and did not quite wed with the columnar treatment. The drawings were very admirable. Mr. Wright, who received an "honourable mention," had a design marked by refinement of detail. His treatment of the projecting staircase blocks showed want of consideration of their side returns, the projections were not in quite good proportion, and the perspective, as was so often the case, rather revealed defects than unsuspected merits. Those neglected returns in a façade formed fatal traps to those who design in plane geometry instead of cube masses. "Cui Bono" had a vigorously-drawn set showing a really fine sense of massing. The interior was, however, rather "thin" in design, and hardly carried on the solidity of the exterior. The author had destroyed the scale of his perspective by filling in the circular openings with black, which forced them into undue prominence, and was fatal to all suggestion of aerial perspective. He mentioned this design for its merits, but it was clearly disqualified as not complying with the conditions of the competition.

The Arthur Cates prize of forty guineas had produced only one competitor, and Mr. Markham, to whom it fell, had thoroughly earned it by honest and good work. It was curious that this prize had not attracted more attention, as a great part of the work required was already done by every candidate who passed the Final examination at the first attempt.

The Grissell Gold Medal and ten guineas was given this year for the best design for a "Stone Skew Bridge." The prize was awarded to Mr. Nott, for an excellent and simple scheme thoroughly well worked out. His design for the pylon piers would be better if the niches and brackets in the lower portion were omitted. The upper parts were too thin in proportion, and rather slab-like when viewed from the side. Although this prize was primarily one for construction rather than for beauty of design, it must not be forgotten that construction which results in unlovely form was architecturally bad.

Mr. Simpson concluded:—"Ladies and Gentlemen,—Here is the younger generation knocking at the door, as Ibsen says; and we hear their vigorous strokes for the prizes of the year without any of Halvard Solness' misgivings. The better the students' work the better is the prospect for British architecture; and we welcome all such as are worthy within our portals. I offer my congratulations to the Royal Institute upon its students, and to the students upon their fine performances, commending to them Ben Jonson's description of 'The True Artificer':—

"'He knows it is his only art, so to carry it as none but artificers perceive it.'"

Prizes and Studentships.

The President then presented the prizes and studentships to the successful candidates in the recent competitions. For a full list of prize-winners and others, see our issue for January 27.

President's Address to Students.

The Chairman then read the following address to students:—

Fellow-students, ladies, and gentlemen,—I propose to put before you this evening a few suggestions as to the methods—or rather I should say, method—of constructive thought in design. As a matter of fact, there is only one such method for any artist, whatever be the vehicle he choose to work in. The arts are all closely allied—at any rate in their methods—and the order of thought-development in each is one and the same. My friend Albert Gilbert the sculptor once insisted that there was another way, called the "fluke," and that he was sure from his observation a great many more designs were produced in that than in any other way. But surely this must be a libel! I won't venture on the statement that I have had no experience of that sort, but I am not anxious to talk about it, and it wouldn't help you if I did. For the one thing the youthful aspirant needs most to have rubbed into him—in season and out of season, if necessary—is that without hard study and adequate thought he will never do anything really good.

The intelligent study of mental processes in design, and the knowledge of the order of thought to be observed, is not unimportant; for, though many follow this order instinctively and unconsciously, yet, seeing that our mental faculties are our armoury, it is good to know what weapons we have at our command, and how and when to employ them.

I am not a philosopher—not even a psychologist; but I have observed and analysed mental processes both in myself and others; I have also gathered light from the analogy that exists in the arts generally—and so I hope that I may be able to say something on this point that will help you in your work. First of all, then, and as a preliminary, a suitable environment must be found. Not necessarily a literal environment of persons, places, and things, but at any rate of thought and mood. Environment is nowadays more a matter of character and temperament than of locality. Whithersoever a man betake himself, it needs powers of self-government and mental concentration to escape the insistent shouts of commercialism and the prosaic business claims which are so apt to usurp an undue share of our attention. Yet, if the imagination is to be free for visions of beauty or even of dignity, if thought is to rise to the expression of noble purpose, the soul of the man must be able to take flight on occasion into the "serene" of the summer sky, leaving the earth and its cares to look after themselves for a time.

Psychologists tell us that moral education is dwarfed, or even impossible unless a man has a certain amount of leisure time for the free play of his moral faculties. Certainly, too, the soul of the artist will perish within him unless he learn to withdraw himself at will into the higher realms of imaginative vision, where no sordid purpose or ignoble thought can live.

Given the right conditions, we may now proceed to analyse the working of thought in design. Let us remember, in the first place, that architecture "speaks." The power of speech—the noblest of gifts to man—is seen in all true art. In language words are symbols, and by their combination into sentences thought is conveyed, the punctuation of such sentences into primary and subordinate clauses, together with other qualities of proportion and rhythm, determining the value and relation of the several ideas expressed therein. Exactly the same in architecture—forms are combined to appeal to the imagination and express purpose. One form of opening in a wall will convey the idea of ingress or egress, another the means of looking out or receiving light. This may be called the "simple sentence," or, if you like, the prose statement of architecture; but when we proceed to the higher forms of combination, to the moulding of these symbolic forms into sequences and rhythmic order, then we begin both to express and to appeal to the higher kind of poetical and imaginative thought. The same laws or principles hold good for the work of the painter and sculptor, both these arts in their higher qualities possessing the power of conveying to and impressing upon the imagination much more than they actually portray.

In music we have the most ethereal medium for speaking to the heart of man. Just as poetry can convey more than prose, just as there are musical sounds too high-pitched for the ear of man to catch them, so there are thoughts and emotions "too deep for words"—for which music provides the only adequate vehicle of expression. Architecture has been termed "frozen music." Like both music and poetry, it is subjective in its appeal; for the same arrangement of lines and colours will suggest fifty different things to fifty different persons. A fine and imaginative work will reveal to each individual some vein or mood of his own, and this above and beyond what was actually present in the mind and purpose of the architect. Every true work of art possesses an inherent energy which will sway the imagination of others and discover to them meanings of which the artist himself is unconscious. The imagination, then, must be allowed a definite place, both in the production of a design and in that reflection which it induces in the beholder.

A good design usually has a definite origin in a germ idea, from which, as from a bud unfolding itself, must be slowly and patiently evolved the true position and relation of the several objects and parts. In connexion with this process of evolution it is worth noting that in architecture as in language the most powerful effects are sometimes gained by the simplest means. That statement is strongest which is given in fewest words—provided the words be adequate and suitable. Why? Because the mind is quicker than the lips; because the imagination can picture more rapidly than words can paint. So in our art there are occasions when the dignified and simple statement is not only the most appropriate, but also the most effective. Not that this kind of statement affords a ready escape from toil; dignity and simplicity come with experience and thought.

An essential element in the production of a design—whatever the idea and purpose of the work—is "feeling," by which either

sympathy or repugnance is called into play. It is by feeling that an architect makes his selection and develops and encourages definite tastes of his own. Feeling is his own private artistic assessor, to judge in the competition of the many ideas and suggestions that present themselves before his mind's eye, as it were.

In the projection of a design on paper, mental perspective plays an important part. Projected as it is on a plane surface, the relative distances of the several parts of a design can only be distinguished and appreciated at their proper value by an effort of thought. Time was, as you are doubtless well aware, when designs were produced in a kind of geometric perspective, that the author might see all round his subject; now we do this mentally, or by developing each side simultaneously.

During the whole process of development and selection the purpose of the work must be kept constantly in view, with the object of bringing out in stronger relief every feature and detail by which this purpose is to be conveyed. The first "idea" relating to the purpose brings with it resemblances which stimulate the imagination. The interest thus awakened, backed by knowledge, provokes to further effort, in which original thought is both checked and stimulated by association and comparison, memory and imagination acting and re-acting on one another—both of them under the control of knowledge and recognised principles. The expansion of the initial thought will resemble the circling ripples produced by the stone thrown into still water—every advance leading on to some fresh development, some more extended idea. With these expanding thoughts enter other considerations, such as questions of material and proportion of parts to the whole. Secondary causes also claim our attention as we proceed—viz., incidental local features and surroundings, contrasts, ornamentation, colour, texture, etc. These are the means which the thought of the designer marshals and controls to give expression to such intangible qualities as purpose, character, manner, and disposition.

Architecture furnishes posterity—unconsciously, perhaps—with the picture of the prevailing manners, customs, and conditions of life. More than that, it reveals, or, it may be, betrays, the emotions and sentiments which have made each age famous or notorious. These are thoughts formulated ages ago which, having found expression in the work of the architect, are living forces to-day. The student should be impressed with his responsibility, and so systematise his thoughts as that his work may be a fitting and representative expression of the best thought of his day; for if he suffer his work to be infected with the haste and self-assertive methods of modern life, these are bound to betray themselves in every line and detail of his design.

There is something much more subtle and mysterious in an architectural work than a mere orderly arrangement of materials. There is life and speech in it. If a man's character may be read in his hand, certainly it may in his handiwork. The life may be noxious, like that of a poisonous plant, or sweet and beautiful, like that of a flower; or, again, it may resemble that of a noble tree—but life there is. The speech may be that of a Shelley or a Milton, or, on the other hand, of the most blatant type of "yellow" journal, but speak the architect's work must and will. It has a music, too, of its own—whether it be the music of one of Beethoven's sonatas or of the latest comic song. When you realise this—and no one can be indeed an architect who does not realise it more or less—you will approach your work with that due sense of its dignity and importance in which alone you will be able to rise to the "height of the (proposed) argument"—if I may adapt one of Milton's phrases to my own purpose. A clear perception of the possibilities both of good and of evil that open before us when work is entrusted to us—in other words, a proper feeling of reverence for our task—is indispensable if we would accomplish something noble or beautiful, or even suited to its purpose.

If an architect is to speak truly—indeed, if he is to be coherent in his message—he must follow the recognised forms, the articulate phrasing, the grammatical order proper to his art. Thought-symbols, of whatever kind, are arranged in groups of rhythmic form like musical phrases in relative keys. In architectural design this is effected by divisional lines and grouping of parts, such divisions being regulated on principles akin to those which govern musical progression and a harmony built up of sounds. Again, contrasts are obtained in music by the use of loud and soft passages, and effects by gradations of sound from pianissimo and fortissimo. So architecture makes use of "strength of tone," gradations being secured in this case by the measure or greatness of projections of the different parts; also by the varying plainness or delicacy of surface and detail.

I will not carry these analogies and definitions further. What I have already said is sufficient, I hope, to convince you that there are laws and principles governing good architecture, and that as nobody expects a harmony from a haphazard arrangement of musical notes, so neither will you do good work in your profession by chance combinations or random methods. We have now come to a point when we can indeed analyse no further, for there is always an element of mystery in the best architecture—a sort of haunting personality that, ghostlike, vanishes just when we think we have it in our grasp. This quality of "mystery"—so pre-eminent in Oriental buildings—is one to conjure with. Veiled under symbolic forms which hide as much as they reveal, it continually draws us on and as continually eludes us. The screening of parts provokes the mind to search further and deeper for that which is beyond the immediate range of vision. Given the element of mystery—which is perhaps the "personal equation" of art—none but the trained mind can make effective use of it. The personal element is of little avail if we have not painstakingly learnt the methods and principles of our handicraft.

One of the commonest of pitfalls for youthful designers lies in certain fanciful ideas of originality. It is easy enough to be original after a fashion. Any mere novelty will serve to astonish or startle; but if we wish to appeal to the higher faculties we must be content to let our originality find expression within the lines on which those faculties themselves work. The great German poet Goethe relates it as perhaps the greatest lesson of his early manhood—a sort of discovery that he made for himself apparently—that if he would "find himself" and enter upon his inheritance, he must recognise and submit to limitations. Originality does not involve a subversion of all that is orderly. In music the gamut remains the same for one man as for another; certain combinations of sounds are pleasing, certain others displeasing, and will not change their character for anybody. So the architect can neither create new elements nor alter the emotional effects of combinations of elements; his hope lies in so training his powers of perception as that he can move freely and with a sure tread amongst the almost infinite variety of paths that open before him. Then he will find plenty of scope for originality without violating the canons of art or wandering into the realms of the unpleasing.

Sir Joshua Reynolds considered that "excellence is the direct result of trained perceptions." Certainly such perceptions are the foundation; any special powers or qualities that a young architect may be conscious of will find their place and expression at a later stage. You may rest assured they will not be thrust out or obscured; they will only shine all the more brightly for having submitted to limitations. As I have said before, the character and mind of the designer will always reveal themselves in his work. The scholarly treatment of one man will appeal to the intellect, while the grace and charm which distinguish another's work will rather sway the affections. The highest achievement, seen only at intervals, lies in a combination of qualities well balanced and under absolute control.

I have endeavoured this evening to show you that there is a certain order and development of thought in the evolution of a design. Mere knowledge will not suffice. Something more is needed than a reproduction of the past or a mere application of mathematical formulæ. If a student labour with but little thought, he may attain to a dazzling skill, but he will neither stir the heart nor convince the mind. The search for the ideal lies ever upwards and onwards by the way of severe mental discipline. Let us remember, in the words of Philip James Bailey:

We live in deeds, not years; in thoughts, not breaths;
In feelings, not in figures on a dial.
We do not live by heart throbs; he lives most
Who feels most, thinks the noblest, acts the best.

Mr. Edmund Gosse, LL.D., said he had been asked to propose a vote of thanks to the President, and he did so with pleasure. It seemed to him that the world was divided, as regards architecture, into three very unequal divisions. There was the enormous majority of persons who knew nothing about architecture at all—who did not know a good building from a bad one, and who had not the smallest desire to know. Then there was the unimportant division who had a great love and taste for architecture, but who had no practical knowledge of it at all, and to that small and singularly unillustrious body he belonged; and, thirdly, there was the division consisting of the fellows, associates, and students of that Institute who knew everything that there was to be known about architecture. He came to that meeting in a very humble state, and that humility was turned to absolute depression of spirits when he listened to the brilliant essay which Mr. Simpson had read—an essay written with a pen alternately dipped in vitriol and in honey. He knew that one of the functions of the Institute was to insist on the relation of architecture to the other arts, on the fact that architecture was itself one of the fine arts. The present President of the Institute was not merely a brilliant observer of the rules of the art of architecture, but he had been singularly happy and sympathetic in linking it with the kindred arts, and specially with the kindred art which came nearest, surely, to architecture, namely, the noble art of sculpture. Therefore, he had listened with particular emotion to the very ingenious and striking address which the President had delivered—an address which was fitted to raise their thoughts to a high level. It was a metaphysical address, the keynote of which was sounded in the words which insisted on the importance of order in the development of thought in the evolution of a design as the central ambition which an architectural student should hold before him. He took the whole address to inculcate this lesson, that the student should always aim at purity, dignity, and freshness of design, and should not give way to the incongruous and fantastic. Well, did not they think that we live in an age when the incongruous and the fantastic were very prominent? And was it not really a great blessing for architecture that it could not go into those realms of incongruity and fantasy that painting and even sculpture sometimes allow themselves? It seemed to him that there was an enormous work for architects to do. When he received the invitation from the Council to be present to hear the President's address he happened to be staying in a little coast town in the south of Devonshire, and in that little town there was a good deal of work which the Institute might attend to. That little town was mainly in the hands of one proprietor, and he an absentee proprietor, and it was filled with dull, stupid little houses all exactly like one another, all looking as ugly outside as they were probably uncomfortable inside. The contrast with old times was curious, for what remained of the old town consisted of charming little houses in most exquisite taste. He was told that the modern houses were all built by one gentleman, the surveyor-architect, who had only one set of designs. That did not seem to be enough, seeing that it could never have been a good set of designs. The President had spoken of two kinds of life in architecture, and had said that the life might be noxious, like the poisonous plant or the latest comic song. He (Mr. Gosse) would like to ask them as an Institute whether there was not a third thing, and whether it was not worse even than noxious life, namely, to have no life at all? It seemed to him that so much of the architecture that one saw was of that

entirely dead order—dead and dismal and fit only to be blown up. The Institute was fighting a difficult and dangerous fight against this universal poverty of design, and there was no end of work to be done throughout the country—not merely in building good buildings, though there was a great deal of work to be done there, but in raising and developing public opinion. Bad taste was being fought by the Institute, to whom they owed a debt of thanks for its effort, in the face of all sorts of difficulties and discouragements and want of appreciation, in directing public taste persistently to the claims of architecture as one of the fine arts.

Professor F. M. Simpson, in seconding the vote of thanks to the President for his thoughtful and thought-creating address, said that in the first paragraph the President struck the keynote that ran through the address i.e., that without hard study and adequate thought no student could hope for success. The President further emphasised the fact that architecture speaks, and that according to the way in which the work speaks, so one could determine the character of the man who designed it. It was not only the good work that lived after one, but the bad work as well, and often it survived longer than the other. It was by a man's work that one judged the character of a man. To take one instance, that of Cockerell. The best idea of the character of Cockerell was not to be had from the accounts of his life or the portrait hanging in that room; neither really gave anything like the same idea of the man himself as his buildings; it was in these that one saw his refinement and scholarly skill, and, above all, the enormous amount of work he did in the shape of study long before he achieved success. The President had ably sketched the evolution of a design, and showed the game of battledore and shuttlecock that went on in a man's mind between his imagination and his knowledge. Those two things were both necessary; one was of little or no good without the other. Imagination was a gift, and knowledge was the result of grind, and it was the mixing of the two things which made for success. It was not enough for a man to possess imagination; he had to work in order to train that imagination so that it should be directed into right channels and not run riot. The President's remark: "It is easy to be original after a fashion," was perfectly true. In an old play there is the character of a would-be wit who, speaking of a friend, says: "His want of knowledge gives him the more opportunities to show his natural parts." Natural parts were pretty crude things as a rule, and it was in the educating and polishing of these that a man's life had practically to be devoted if the result was to be a success. A student was to be congratulated if he possessed the gift of imagination; it was the one thing he could not acquire if he did not possess it in the first instance. They owed their thanks to the President for laying such stress on the fact that two things were necessary—first, the imagination in order to conceive, to obtain, the idea; and, secondly, the educated taste that would enable the student to work it out thoroughly.

The vote of thanks having been heartily agreed to,

The Chairman briefly replied, and said that as to Mr. Gosse's remarks about dead architecture, he had relegated that to the past. They might think he had laid too much stress on building thoughts and castles-in-the-air, and that there was not much 5 per cent. to be got out of castles-in-the-air; but it was necessary to give thought to these matters in order that one's imaginative thoughts might be materialised.

The New Premises.

The Chairman announced that the next meeting would be held on the 19th inst., when Mr. E. Guy Dawber would read a paper on "Furniture."

The Chairman also stated that a special general meeting will be held on Tuesday, the 20th inst., when the following resolution will be moved from the chair: "That the Institute do purchase the freehold site between Nos. 11 and 13, Portland-place, London, at the price of 19,500*l.*, and do erect thereon a building to include the offices and hall of the Institute at a total cost, including the purchase of the said site and the erection of the said building, of 53,000*l.*, and that the Council be authorised to raise this sum by the sale of stock belonging to the Institute and by mortgage of the said site and building on terms to be approved by the Council, such money not exceeding in the aggregate the sum of 53,000*l.*, as may be necessary for the purchase of the site and the erection of the building."

The meeting then terminated.

ROYAL ACADEMY LECTURES.

MR. JACKSON commenced on Monday last his series of four lectures to Royal Academy students on "Reason in Architecture." He said that architecture had been much talked about and written about, from several points of view. There were the numerous practical works on building construction, which however had not much relation to architecture as an art. There were the pictorial illustrations of architecture, from the mere drawing-room table views to the drawings of Piranesi and other artists in architectural subjects. Then there were the learned treatises of men like Palladio, Serlio, and Vignola, who reduced all architecture to rules founded on the precepts of Vitruvius. There were the numerous illustrative and descriptive works of the men of the Gothic revival. Lectures on architecture had been given at the Royal Academy from time to time for many years past: those by Soane and Cockerell, the leaders of the Greek revival; those by Scott and Street, who dealt with Gothic architecture, and those by his immediate predecessor, Professor Aitchison, on Roman architecture and on Vitruvius. With all this, did anything remain to be said? The observation of the architecture of the past had been so complete, everything had been illustrated so fully, that architecture in its archæological aspect seemed to have been exhausted. But architecture had another side than the archæological; we might study ancient architecture not merely in regard to its external facts, but in regard to the principles on which it was developed. Architecture was on a different footing from the other arts in the manner in which its ancient productions were used for study. Sculptors and painters studied ancient work in order to learn from it, not in order to imitate. Canova, Thorwaldsen, and Flaxman, it was true, produced imitative forms of sculpture of the classic type, and Chantrey condemned his portrait statues of eminent modern men to the doubtful clothing of a blanket, in deference to the classic spirit; but in the present day sculpture was essentially modern—it might be said in some cases too modern. In painting there had never been quite the same temptation to reproduce classic work as existed at one time in sculpture. But with architecture it was different; modern architecture was very largely imitative of the architecture of the past. In excuse for this it must be remembered that an architect was differently placed from other artists, in that he was bound to consider utility; he must combine art with practical convenience, suited to the requirements of his day. Every Englishman, for instance, expected to have in his house a dining-room, a drawing-room, a study, and various other usual rooms, and the usual sanitary appliances and provisions, and this fact tended no doubt to set limits to the architect's invention; for the habits of life changed very slowly, and as long as they remained the same architecture had to accommodate itself to them. The general requirements in churches, as well as in habitations, were very much the same as they had been for a long time past; and hence a certain conservatism, and a reference to the work of his predecessors, was more or less forced on the architect. The difference was that in the present day an architect learned from his predecessors; in the Middle Ages he learned from his contemporaries. But from Brunelleschi and the Renaissance down to Scott and the Gothic revival the eyes of architects had always been turned towards the past. There was another important difference between an architect and other artists, that he did not, and could not, carry out his work with his own hands, as a sculptor or painter did. Sculpture, it was true, had become now-a-days very much a matter of modelling, and the sculptor did little work on the marble with his own hands; but a painter at all events did his own work with his own hands; whereas the modern architect worked out a design on paper in an office, and could not realise his design without the assistance of a crowd of workmen; and even before the days when the modern architect arose—when the architect was a master mason or chief builder living on the work, though he might have worked with his own hands on the building, it could only have been on a small part of it; some special details of sculpture decoration perhaps. The time was long past when the architect lived on the work, chose the stone, and saw to everything with his own eye; it was a seductive picture, but one impossible to realise in the present day. And that was one reason why there was a paucity of invention in modern architecture; for new suggestions arose in great measure out of experience of difficulties met with in handiwork. The smith who carried out a piece of metal-work came across difficulties in the execution of it which suggested a new treatment to him, but this kind of suggestion from the actual work did not reach the architect who made the drawing for it. Much of the charm and interest of ancient buildings lay in the evidence they gave of the special means taken to meet difficulties arising from accidental or unexpected causes; such difficulties were occasionally the foundation of a change of style; but they were only realised by the architect who was on the spot. Apart from this direct influence of the facts of building, architecture tended, as at the Renaissance, to resolve itself into formulæ, such as were represented by the Classic orders. The Gothic revival was in the first instance a reaction against the Classic formula; but while setting themselves free from the Classic fetters, the Gothic revivalists proceeded to forge new fetters for themselves. Batty Langley had even attempted to resolve Gothic architecture into five orders, in imitation of the Classic division; and though his influence did not count for much and his "orders" were not adopted, a new tyranny of precedent was soon developed, not less rigid than the old tyranny of the Classic orders. Forty years ago precedent was everything with the Gothic revivalists; religion even was called into the field; Classic architecture, in defiance of the evidence of history, was branded as "Pagan"; and the nearest possible approach to the reproduction of old work was the test of excellence. A good deal of this influence still survived in Gothic as now practised, more especially in ecclesiastical work; and it must be recognised that the force of historical association was stronger in connexion with architecture than with any other art. We looked at the Elgin marbles as sculpture simply, without being moved to consider too closely who and what were the men who made these; but with buildings it was not so; they were too strongly associated with national history. As Ruskin had said, "we want to know not only how men thought but what they handled" (and, it might be added, how they handled it). So with the pictures of Raphael, for instance; we looked at them for their own sake as pictures, not as history; but with a Perpendicular building, which was of the same date, we could not dissociate ourselves from history in the same way; we could not separate it in our minds from the memory of its founders and of the generation which erected such buildings. As architects therefore we stood so rooted in the past that we could not pluck it away; but let us draw the true lesson from it, and not mistake external forms for principles. Architecture, like history, might be looked at in two ways. There was the old way of writing history—getting up facts and dates and names of kings; but that did not satisfy us now; the modern historian aimed at getting into touch with the people of the time he wrote about; at understanding not only what they did but why they did it—how much was due to individuality and how much to social custom. Thus in like manner there was a true and false way of studying architecture; and unfortunately the false way was the most common. The study of architecture to many was only the study of outward phenomena and dates; a method which was no use for the present day, nor for the true understanding of the past. Architecture was the most reasonable and logical of the

arts; for every change in it there was a reason traceable. To understand the expression of the men of past times in architecture, we must know what it was they were trying to express. Outward forms in architecture were not the suggestion of mere fancy, they arose from special needs and circumstances, from the desire for economy of material. To make beautiful things was different from representing them, as in painting. Architecture did not imitate nature, but it was subject to natural laws. There had been instances, no doubt, of adoption of certain forms for artificial reasons; but apart from such, at the root of every change in architecture had been a change of circumstance. We saw this most clearly when considering buildings in a broad sense; it must not be pushed too far into detail; yet even in tracing the history of a detail in architecture we could sometimes realise this influence of circumstance very clearly. Take the Corinthian capital, for instance, which had been stated by Vitruvius to have been suggested by a basket of foliage with a tile laid on the top, and some of the leaves escaping through the interstices of the basket. Whether that were true, or only an invention after the fact, we discerned plainly in the Corinthian capital certain distinct elements—the abacus on the top, with its concave line, the rounded bell beneath the foliage, the two tiers of leaves, and the *caulicoli* or stalks which emerged from behind them and turned over into scrolls beneath the projecting angles of the abacus. Now it was observable that the strength of that capital lay in the bell, not in the abacus; the angles of the abacus and the scrolls under them could not really carry weight; consequently it was a rule that the entablature was not thicker than the centre diameter of the column, or practically, in other words, not thicker than the bell, which really carried the weight of the superstructure. In a capital from Spalato they would see that the *caulicoli* had altered their form, but the angle was still weak, though the capital was strong enough for what it was required to carry. When the classic column was employed in basilicas with a thick and lofty wall above it carrying a heavy timber roof, the classic capital was not strong enough for its position, and though its form was retained, the Byzantine builders solved the difficulty by placing their peculiar feature of the impost block over it, which spread sufficiently to take the springing of the arch, and was solid enough to carry it. In some later examples, as at St. Sophia and Parenzo, they would see that the main capital had changed its form and become convex in line, and would have sufficed to carry the springing of the arch; but the second capital was still retained as a matter of habit. In an example of a capital from Trieste it was seen that it had been abandoned as a separate feature; it was still really there, but it became part of the main capital, and appeared as a very thick and solid abacus. In an example from the vestibule of St. Mark's, the Byzantine impost was carried over two columns, on the capitals of which it rested. Several other successive variations from Noissac, St. Germain des Prés, and Le Mans were shown; and in an example from Sens it was seen that the old concave abacus line of the classic capital was still visible, but only as a kind of ornament, under the soffit of the real mediæval abacus. In an example from St. Leu d'Esserent the ornamental concave Corinthian abacus had disappeared altogether, and the classical angle volutes had become leaves; all trace of the classic capital has disappeared except only in the still recognisable form of the bell. The well-known Early English form of heavy-lobed foliage was finally an entire departure from the Renaissance of the Classic form of leafage. In England, and in Normandy also, we did not find all the tentative stages of change which had been illustrated. The Norman cushion capital was an easy and natural development out of a plain circular bell like an inverted frustum of a cone; the arch springing above it being rectangular, it was easy to see that there was wasted material between it and the upper circumference of the bell, each face of which was cut down vertically, leaving the cushion capital with its four faces, which was complete in itself; the abacus moulding above this was only an ornament. At Canterbury, where French influence prevailed, the square form of the Classical abacus remained, but in English Gothic generally the preference for a circular abacus, and the consequent removal of all reminiscence of the angle volutes, did away with the last vestige of the Classic capital; while in such examples as the caps from Southwell chapter-house, later in the style, even the conventional character of the leafage had disappeared, to be replaced by naturalistic foliage so beautifully and delicately executed that it only wanted the colour of nature to make it look real, while it still preserved the supporting character proper to its position.*

The examples of capitals shown on the screen, more numerous than we have been able to mention, afforded a most interesting opportunity of comparative analysis of the growth of the mediæval from the Classic capital.

DEVELOPMENT OF SCULPTURE IN GREECE AND ROME.

At the London Institution, on Monday evening, Mrs. E. Burton Brown lectured on "The Development of Sculpture in Greece and Rome." She said the subject was a large one, but she did not intend to take up every statue to be found in Greece and Rome, but only to deal with the development of the spirit of Greek art and a little with that of Rome, and she would illustrate the general principles on which one system and style of art grew into another. The characteristic of Greek art was generally described as being ideality, and that of Roman art of realism, and these words were right if they understood what they meant, but they each raised so many interpretations that one had to be careful about them. What it really came to was that the Greek artist was a great creator, and the Roman artist was not. The Greek artist never sat himself down before a single man's or woman's form, or before any scene or front of people with the intention of copying or imitating them. That to him was not the nature of art at all. He was a creator and an originator, and he was always working from within upwards, and he made a new thing every time he set out to make a statue or relief. He earnestly watched the moving figures of men and women in order that he might know what attitudes and what beautiful lines each one of them took, and then he made something which was more beautiful than what he had actually seen. If one did not do that it was difficult to say what was the use of having art at all. As Whistler put it, "All the elements of beauty are already existent in the world outside; the artist is born to select and choose." Greek art was ideal, therefore, because it deals with ideals, and strove to create types, and was not merely a copy of existing forms. Roman art was exactly the opposite to that. The Roman was a great maker of history, but he was never a great artist, and perhaps the two hardly ever went together. The Roman was content to imitate actual forms; to make a speaking likeness of the people he saw. In the difference between the two lay the whole difference between two opposite ways of looking at art. They saw in the very beginning, when the Greeks had bad tools and hard stone, and no knowledge of anatomy, and the greatest difficulty in mastering their materials, how they were then striving to make something that, of their own inherent consciousness, was really beautiful. In the period after the Persian wars they began to make very beautiful but still rather stiff and broad, solemn, strong figures, and the Vth century was one when the ideal was strength and dignity. In the IVth century they had greater command, and then tools and materials and the far greater knowledge of anatomy enabled them to make statues with far more effect in repose and freer in line, and, as it were, less dignified, less solemn, and less finer perhaps. They were equally ideal, but the ideal was a new one, and was an ideal of delicate beauty and grace rather than of majesty and solemnity. Then they got to what were called Hellenistic times, and there they found that the old Greek model was changed, and the old Greek style was modified by various infusions of different foreign ideas. Lastly, they came to Rome itself, where the Roman sculptors, living in a city crowded with splendid masterpieces of the old Greek days, longed to imitate Greek forms, but were themselves always filled, more or less, with their own realistic tendencies, so that Roman art was Hellenistic in a sense. Mrs. Burton Brown proceeded to illustrate by means of lantern slides the different styles. Commencing with views of statues of priestesses, dating probably about 520 B.C., she showed how they were practically only upright stone pillars with just a few lines indicating the drapery. The Greek began by worshipping a tree or trunk, and, being an artistic person, immediately began visualising his god or goddess, and tried to turn the pillar into a man or woman, as the case might be. In these early figures they saw the archaic smile which was their only way of showing expression and life. Then, in the pediments of Ægina, they found the figures still stiff and rigid, and still with the archaic smile, but there were signs that the Greeks were getting on. In the work of Myron, Polycletus, and Pheideas, they got the representation of movement; Myron represented life and movement but no soul; Polycletus represented beauty in pose; but Pheideas combined the two, and represented absolutely perfect pose and beauty of line and form combined with soul. In the Vth century men had been drawn together by the Persian wars in a great patriotic struggle, and their triumph was expressed in the art of the Parthenon by Pheideas and others. In the IVth century men had learned to make sculpture. In the early struggles they believed they owed their victory to the gods, but in the IVth century they began to speculate about the gods, and they found that, in the work of Praxiteles, the treatment of the gods was different. His statue of Apollo, the Lizard Slayer, was very beautiful and delicate, but it was not Apollo, the sun god. It was an ideal, not of strength and dignity, but of beauty and delicacy. Here they began to have dreamy eyes almost closed, and little open lips from which the breath seemed to come and go—the expression of the face and the treatment of the features was quite different. Scopas, his great contemporary, was subject to the same influences, but, whereas Praxiteles was always dreamy, Scopas was full of fiery movement. Then they came to Lysippus, the court sculptor of Alexander, and they began to feel that the end was coming. Next came the school of Pergamon, and they saw how the art had gradually fallen from the desire to represent something noble and fine, and got to be more and more exaggerated. In Rome much the same story had to be told. They excelled in clever realism, but there was no desire to idealise. The connexion between Greek and Roman art belonged to the time of Augustus, when a strong effort was made in Rome to imitate the beautiful Greek models of which the city was full, and in the great relief for the altar of peace they could have nothing more Greek than some of the figures. It was a curious Hellenistic art which combined local feeling with that influence of Greek models which was really what Hellenistic art meant.

* With this we cannot agree. The Southwell carving, beautiful as it is, always seems to us to have the defect, in an architectonic sense, of looking as if it were applied round the bell of the capital instead of developing from it.—ED.

RURAL HOUSING.

At the meeting of the Central and Associated Chambers of Commerce held on Tuesday at the Society of Arts, under the Chairmanship of Mr. Courteney Warner, M.P., the Rural Building By-laws Committee presented a report on the reference made to them to consider the whole subject of the Building By-laws as drawn up by the Local Government Board. Having given a brief review of the legal difficulties with which the local authorities are confronted, the Committee said that the problem with which they were confronted was to suggest means by which cheap and healthy dwellings might be erected for agricultural labourers in purely rural districts, and at the same time not to disregard the just claims of local authorities for protection against the jerry-builder, and to preserve the health of the areas over which they exercised jurisdiction. As matters now stood, it seemed almost hopeless to reconcile these conflicting claims. The position at the present moment was that

the majority of rural authorities who had adopted by-laws were working under those of 1877, which were really only suited to urban districts. If it were only a question of drawing a sharp dividing line between urban and rural districts there would be no difficulty, as the by-laws of 1877 were quite suitable for urban districts, and those of 1901 fairly met the case of the purely rural neighbourhoods. The difficulty really was that a rural district could rarely be said to be wholly rural. Out of the 668 rural authorities there were seventeen whose by-laws were not based on any model series, and were made before the issue of the first model in 1877. There were 283 who had adopted the 1877 by-laws; 138 were working under those of 1901; and there were still 246 who had adopted no by-laws at all. In the Committee's opinion this was not a desirable state of things, and they could see no reason why the whole country should not be administered under one uniform system, provided such a system were made sufficiently elastic. They considered that the present condition of affairs was not satisfactory, and that no possible readjustment, either by amending Acts or by the exercise of administrative powers, could ever place the matter on a permanently satisfactory footing. An entirely new building code was necessary. They therefore suggested the appointment of a Royal Commission or Departmental Committee to inquire into the subject, which body might consist of an official from the Board of Agriculture and the Local Government Board and representatives of the Royal Institute of British Architects, Institution of Civil Engineers, Surveyors' Institution, Central Chamber of Agriculture, Land Agents' Society, and the Rural District Councils' Association. The Commission should be directed to frame one comprehensive code of by-laws, so as to make them equally and automatically applicable to the following classes of buildings: (1) Isolated buildings, (2) buildings partly isolated, (3) buildings in villages, and (4) buildings in towns. Special powers in a new building code should be given to local authorities with reference to exemption, and the principle of a Court of Appeal, such as was to be found in the London Building Act, should also be embodied.

Colonel H. Le Roy Lewis, in proposing that the report be received and sent to the local chambers for consideration, said he felt there was really a chance of some legislation being passed this session, especially as they were not asking for money.

The resolution was adopted.

THE INCORPORATED CLERKS OF WORKS' ASSOCIATION.

THE twenty-third annual dinner of the Incorporated Clerks of Works' Association was held on Saturday last week at the Criterion Restaurant, Mr. Henry T. Hare presiding, supported by Messrs. H. Brown (Herts County Council), F. L. Dove, C. G. Hare, E. T. Hall, C. Harrison Townsend, J. Hill, J. Pain (President of the Association), R. Kellond, J. Brady, J. Davies, A. Fincham, and a numerous company of members and friends.

The loyal toasts having been honoured,

Mr. Joseph Davies proposed the toast of "The Architects and Surveyors," and in the course of his remarks he referred to the kindness he had received as a clerk of works from the architects and surveyors he had served. It made all the difference to a man and his work whether he received a little appreciation or did not. As to the future of business, times had been hard and bad enough, and he hoped that there would be an improvement in the near future. What the country wanted was land reform, which would give greater employment all round.

Mr. E. T. Hall, with whose name the toast was coupled, in response, said that architects were intimately associated with surveyors, and he could express his gratitude to them for the help they had rendered to him. A good quantity surveyor was of very great assistance to an architect. As to the relations between clerks of works and architects, he had found his clerks of works not only efficient, honourable, and straightforward men, but he had always been on friendly relations with them. Everyone liked to receive a little appreciation when trying his best to do his duty, and it was but a slight thing for the architect to show his appreciation. As to the work of architects, there were a great many public buildings rising up which he hoped did credit to those who designed them. There was one work—the Queen's Memorial in London—by one of our greatest architects, which would be, when finished, of immense importance to this city, and it was one of the few imperial works which we had undertaken in recent years. In India there was another Queen's memorial, by an architect well known to them, which would be a credit to the time. There were also the War Office, by the late William Young, which he regarded as an admirable building, and the fine block of buildings on the other side of the road, designed by the late James Bryden; and it was to be regretted that in both those great works the architects died before they saw the fruits of their energy and ability. With Mr. Davies, he hoped that the present year would bring plenty of work. It might be said that everyone in that room represented the employment of perhaps many hundreds of men in the course of the year. Military men said that there were two officers in a regiment—*i.e.*, the colonel and the sergeant-major—and in the building trade it might be said that the colonel was the architect and the clerk of works was the sergeant-major, and there was no doubt that as the position of the sergeant-major was one of great responsibility, so was the position of the clerk of works, who really "ran the show" and saw that the work was done. He believed that better work was never done in England than that which had been done in recent years and was being done now, and this work must be continued, to the credit and glory of our generation and country.

Mr. John Davies, in proposing the toast of "The Worshipful Company of Carpenters," referred to the excellent work of the Company in the matter of technical education. The classes and lectures of the Company were very good of their kind and were well attended, and the Company's library had been of much help to him and others. The Association was specially indebted to the Company for finding them a room in which to meet and for housing their small library.

Mr. J. Aitchison said they had hoped to have a representative of the Company present to respond to the toast, but he had pleasure in doing so. As Mr. Davies had said, the classes and lectures held by the Company were specially useful to young men connected with the trade, and he hoped that these classes and lectures would be attended by young men in greater numbers.

The Chairman then proposed the toast of the evening, "The Incorporated Clerks of Works' Association," coupled with the name of the President, Mr. J. Pain. It had been said that the essentials of successful building operations might be classed under the first three letters of the alphabet—*i.e.*, the architect, the builder, and the client; but, while these three were very important component parts, he ventured to think that building operations would in many cases, if not in all, not go on very well without the assistance of the clerk of works. He was almost inclined to think that the client, important as he was in one respect, had no right to occupy the third position in that trio, to the exclusion of the clerk of works, and that a good clerk of works was the third essential to a successful building work. A clerk of works required to have a great many qualifications, and ought to be a sort of Admirable Crichton: he must know everything about the operations of building and building material; he must be a sort of policeman during the carrying out of the work; and, thirdly, he must be a man of tact. If the clerk of works had no tact, it did not matter what his knowledge of building operations might be, or what his firmness might be in the case of inferior work or material; without tact there would be continual trouble in the carrying out of a work. He had been very fortunate in getting clerks of works to carry out his buildings, and he had not been troubled by that friction which sometimes occurred in carrying out building contracts. The clerk of works who had tact was generally regarded by the builder as one of his best friends, for he saved the builder a great deal of trouble and made the work go on smoothly. The Association had been in existence for twenty-three years, and he was quite sure that it must have exercised a very beneficial influence over the whole of the members. The Association tended towards social intercourse, and gave members an opportunity to exchange views and bring their difficulties and troubles before their friends, and it must be very helpful to all of them. He did not know whether the Association provided any system of training or a curriculum for the education of clerks of works, but they had heard that such classes as were instituted by the Carpenters' Company were largely attended by young clerks of works, and were found very useful. Classes of that sort must be very beneficial, but he did not think that they could take the place of practical training, and any man who was going to be a really useful clerk of works must serve his time at a trade and be at a bench. The best men he had known had gone through a trade and all the phases of it, and had become general foremen and then clerks of works. Those were the best men he had had to do with.

Mr. John Pain, in response, said that the first instance of a clerk of works occurred in 1241, in connexion with certain works at Windsor Castle for Henry III. At those times the clerk of works was attached to the household of the monarch, that being the case in 1641 (Edward III.) and in 1610, when one Ed. Carter held such office in the household of Prince Henry. In those days, however, the engagement of a clerk of works was a rare occurrence, and only in the case of large undertakings; but he thought that a clerk of works should be employed in the case of any building of the value of 5,000*l*. As to the Association, the advantage to any clerk residing in London or the suburbs of belonging to it was obvious. Modern requirements rendered necessary a closer and more intimate acquaintance with sanitary, electric, and other matters than was formerly the case. A clerk had to be well up in these matters, but it was obvious he could not be an expert, and therefore membership of the Association was of great advantage to him.

Mr. J. Brady then proposed the toast of "The Press," coupled with the name of our representative, who replied. In the course of his remarks Mr. Brady referred to the excellent little journal which he edits—*i.e.*, the *Clerks of Works' Association Journal*, which is issued monthly.

The toast of "The Visitors" was then proposed by Mr. R. Kellond and acknowledged by Mr. J. Hill, of the London Brick Company, who remarked that next to the architect the clerk of works was the most important person on a building that the merchant had to deal with. He also referred to the extensive character of the knowledge necessary to make a good clerk of works and to the classes of the Carpenters' Company, which had had a great deal to do with the position occupied by the clerk of works.

The last toast was that of "The Chairman," ably proposed by Mr. A. Fincham, who said that two or three architects had just been returned to Parliament, and the question had been asked: "Why have not more been elected?" He thought the answer was that architects were too busy to be engaged in Parliamentary work. There were to-day architects who were responding to the demands made upon them as well as, if not better than, had ever been the case. Some twenty or thirty years ago most of the buildings erected were a sort of debased Gothic, and architects were twitted for want of originality, but during recent years there had been a development of what might be called civic and municipal architecture, and the architects of these buildings would in time to come be regarded as pioneers and remembered as we remember Pugin, Barry, Scott, and Street.

The Chairman, in response, said it was quite impossible for anyone living now to say whether the architecture of to-day would in the future be considered equal to the architecture of the past. We could not look upon these works with the perspective which was necessary to be able to judge them, but there were a number of architects living who were doing, according to their lights, their level best, and no man could do more than that. Whether their work lived or did not time would decide; but any failure on their part would not be due to lack of effort, for

he knew how honestly and sincerely they tried to carry on their profession.

The proceedings then terminated.

THE SANITARY INSPECTORS' ASSOCIATION:

ANNUAL DINNER.

THE twenty-third annual dinner of the Sanitary Inspectors' Association was held on Saturday last week in the Venetian Salon of the Holborn Restaurant. The President, Sir James Crichton-Browne, was in the chair, supported by Sir William Broadbent, Sir Wyke Bayliss, R.A., Sir Shirley Murphy, Dr. J. C. Thresh, Mr. Andrew Clarke, and others.

The loyal toasts having been honoured,

Dr. J. M. Rhodes, in proposing "Local Government," remarked that the public did not realise what a great amount of work city councillors did, and frequently overlooked the fact that their services were purely gratuitous.

The Mayor of Battersea, in response, said that he thought the difficult and arduous labours of local governing bodies were beginning to be recognised. The civic spirit was being revived, and he attributed this in no small degree to the creation of borough councils. There was much yet remaining to be done by citizens for the improvement of the neighbourhoods in which they resided, and in many places there was a great amount of work for the sanitary inspector yet to do. They needed a broader and more sympathetic system of local government. With all our disadvantages, however, we were far in advance of many other towns.

Sir William Broadbent then proposed "Science and Art." Sanitary inspectors were, he said, in the forefront of the battle against disease, and discharged their duties with zeal and intelligence. He hoped the time would soon come when they would join the medical profession in the battle against tuberculosis, and fight it with as much success as they had fought fevers and similar diseases. It was upon medical officers of health and sanitary inspectors they would have to rely in dealing with that disease.

Sir Wyke Bayliss said, in response, that art and sanitation were not so widely apart as many people supposed. One of the loveliest things in the world was a drain—when it was consecrated by art in the form of a gargoyle on a cathedral. Art was the science of beauty, and sanitation was the science of health, and what were beauty and health if they were not the same thing? A motto of his was: "However old the world may be, art is always young." Might it not only be young, but healthy.

Dr. Thresh also acknowledged the toast, and said there was a good deal of connexion between science and art, and there ought to be more. In a great city they made the difference between beauty and squalor. It was in the mean streets and the back streets that their work awaited them.

The Chairman then proposed the toast of "The Sanitary Inspectors' Association." He thought the beneficence of the work of sanitary inspectors was now generally recognised, even by those who winced under it. There was, he felt sure, a growing appreciation in the public mind of the value of their services, an appreciation which must take shape one of these days in the granting to sanitary inspectors that security of tenure which was requisite to enable them to do their work without fear or favour, in the provision of adequate means of education, training, and official certification for those who were desirous of entering their ranks. It was satisfactory to note that there was now a steady, intelligent, and sustained interest in sanitary matters throughout the land, and an improved comprehension of them. It was to be hoped that, in the future, with a well-organised intelligence department composed of medical officers of health and sanitary inspectors in every town and county, they would not be caught napping or wait for the scourge of pestilence before putting their house in order, but they should practise that prevention which was better than cure. Diseases that had no business to be about would be caught up and exterminated when they had a thoroughly efficient sanitary police, invested with full authority, and working under a Minister of Public Health with a seat in the Cabinet. What they had to do was to convince the public of the power and potency of sanitation, and of its pecuniary advantages, and they had, he thought, an opportunity of pressing that lesson home on them in connexion with a disease that was at present attracting much attention—namely, phthisis or pulmonary consumption. An interesting point to note was that the sanitary reforms by which those affected by consumption had benefited were not specially directed against consumption, but had other objects than the reduction of consumption in view. Land drainage on a large scale was undertaken in the interests of agriculture, but it abolished malaria in the Fen districts, and caused a heavy fall in the mortality from consumption. The laying of main sewers and house drains and the abolition of cesspools in towns were intended to prevent other diseases; and it was a surprise when it was discovered that they had, no doubt by increasing the dryness of the houses and the purity of their asmosphere, been followed by a marked decline in the fatality of consumption. The window-tax was abolished on fiscal grounds, but by admitting to dwellings that sunlight that was destructive to bacilli and by permitting improved ventilation it also still further restricted the ravages of the disease. The improvements effected in houses, especially those of labourers and artisans in the thickly-populated parts of towns, undertaken mainly on ethical grounds, had largely helped in the suppression of consumption by the clearing away of infected areas. It was clear that every sound sanitary advance had far-reaching and wide-spreading effects, and might accomplish more than was anticipated when it was undertaken.

Mr. W. W. West, Chairman of the Central Executive Council, responded. They had worked during the last year, he said, under great depression on account of attacks which had been made upon them in some of the newspapers. It had been stated that sanitary inspectors, with very few exceptions, were corrupt and failed to do their duty, but such an accusation was entirely without foundation.

The toast of "Kindred Associations" was proposed by Mr. Baldwin Latham, and, in acknowledgment, Dr. Parkinson said that, unless sanitary inspectors and medical officers of health worked together, the health of the country must suffer. He was afraid that their endeavours to secure a Bill for the security of tenure would, in view of the change of Government, have to be put forward again. They had been told that the municipalities would be averse to giving them what they asked for, but he did not see how this could be, as they asked for this protection so that they might do their duty fearlessly, without the risk of not being reappointed on that account.

Other toasts were "The President," proposed by the Venerable Archdeacon Sinclair, and "The Press."

During the evening a presentation was made to Mr. Isaac Young on resigning the chairmanship of the Executive Council, and the Chadwick Medal, with a cheque for fifty guineas, was awarded to Mr. James Lord, of Failsworth, near Manchester.

THE ARCHITECTURAL ASSOCIATION DISCUSSION SECTION.

AT a meeting of the Discussion Section of the Association, held on January 31, Mr. E. W. Wonnacott being in the chair, Mr. A. C. Dickie read a paper on "Internal Steps and Stairs and Their Treatment," the substance of which was briefly as follows:—

The general principles of stair planning, given in my paper of last session on "External Steps," apply equally to internal steps and stairs. No stair can be considered perfect in which comfort and ease have not been studied, together with propriety and fitness in scale. The judgment of comfortable going in a stair is largely affected by length of leg and strength of heart. Tredgold's rule of tread and 2 risers = 24 is a safe proportion. Barry put the perfect proportion at 5-in. risers and 16-in. treads. Palladio gives the minimum of tread at 12 in., with 6-in. riser, and the maximum at 16 in., with 4-in. riser, thus supporting Tredgold's rule. The mimimum width of stair has been fixed at 4 ft., allowing two persons to pass comfortably. Palladio states that no flight should have more than thirteen steps. Barry defended long flights when called to question regarding the flight of twenty-six steps which he designed for the House of Lords, citing Italian examples of much greater number, whose proportion of 16 and 5 made them "as easy as walking on a floor."

The lecturer then read extracts from Palladio on the subject, who laid down certain principles as essential to success.

In domestic work it is never agreeable to expose the stair too soon, as its traffic is usually of a private nature, and needs a certain degree of privacy. On the other hand, the grand staircase of a public building must affect a generous liberality, expressive of publicity, and its position accord with its character. In this class, too, may be included certain palaces and great mansions. In the baronial castles, prior to Elizabethan times, the spiral stone stair was in common use. It was often narrow, inconvenient, and typical of warlike times, and not till the Elizabethan period did the stair give evidence of a more peaceful time. In the châteaux of the Loire valley the spiral stair attained great proportions. In general, the castles in Scotland show great similarity in the management of the plan. A stair should be in character with its building, and sober treatment and proportion apply specially to small domestic examples. In these days of overcrowded gatherings, the hall fills a very honourable position if designed properly, with a well-placed stair. In houses of a fair size, therefore, we may primarily declare for a hall which aims at being something more than a passage, and recess our stair. This may be a newel or geometrical stair; but, perhaps, even better, a close stair housed between walls. It is a simple straightforward method. A stair with two flights and a half-landing is always right. For want of space quarter-landings and two steps between are often substituted—an ill-advised makeshift. The dimensions of a stair are much less elastic than in the other parts of the house. If thoughtfully introduced, winders can often be well used. They should occur near the commencement of the stair, and not at its finish. Head-room requires careful consideration, and for the small house stair should not be less than 7 ft. 6 in. The trimmer of the floor above should not be placed directly over the first riser, but advanced slightly. In our anxiety to avoid cramping the stair we must avoid the other extreme. Dog-legged stairs are not usually happy in effect, as it is difficult to avoid an awkwardness at the meeting of the return flight; however, it is preferable to the contracted well type. The geometrical stair is graceful and pleasant, especially when planned in a complete segment or ellipse, but is really a stone type developed in wood construction. For an open stair the newel and string principle of the Elizabethan period is the most charming. Short, wide flights with quarter-landings find much favour; some have long flights with half-landings, or arcaded gallery landings, all direct and simple on plan. Newels, strings, handrails, and balusters were all alike massive and richly treated.

Mr. Dickie then described certain types of this work from examples shown on the screen. Continuing, he said he thought the spiral stair might well be used more frequently, and instanced Street's stairs at the Law Courts, as also the various forms shown in Palladio.

Wren's geometrical stair at St. Paul's was a fine example, ninety-two steps in one flight, of 16-in. tread and 6-in. rise. The Château d'Amboix has a fine circular staircase surrounded by a corridor. The way in which the staircase dominates the whole external expression of these French examples was very noticeable.

Turning to Italy, the stairs in the Villa di Papa Guilio were very happy, double segmental flights on either side leading down to a lower hall. A common Italian type was the simple straight flight seen in the arcaded quadrangle, as at the Gondi Palace.

S. Giorgio Maggiore had a fine and broadly-treated stairs with central flight and landing and flanking flights of thirteen steps each. Palladio showed a simple square staircase of four flights of eleven steps each, and

four landings within a close wall. Another great example was the stair of the Corsini Palace, of fifty-three steps, approached through an arcade. The staircase measured about 75 ft. by 46 ft., with flights 11 ft. 6 in. wide. The Barberini Palace had a beautiful elliptical stairs, rising to a height of about 80 ft. in a continuous helical curve; the intra ellipse being treated with an order and balustrade carried in twin columns. Stairs must be sufficiently lit throughout, with special care for the lighting of the turnings. The solution, or otherwise, of the lighting problem might make or mar the stair. The works of the great masters formed our guide, and our study would be fruitful only in proportion to our ability to read the works in which their thoughts were so fully expressed.

Mr. Trant Brown, in opening the discussion, pointed out how interest and success in planning revolved on the stair question, instancing the want of interest of the flat or bungalow types. Seeing that stairs were used by people of all ages and sizes, comfort must be sought, not only in proportion, but in frequent landings and suitable surfaces to the stairs themselves. Flights ought not to exceed twelve steps in private houses, preferably nine or ten. A staircase leading to a blank wall is disappointing and depressing. Top lighting needed to be supplemented by side light. The working width of staircase was sufficient if 6 in. wider than the doorways. Winders were to be avoided if occurring only as an occasional surprise, mixed with long and short flights and landings. The single step was to be avoided absolutely.

In the ensuing discussion a good many small practical points were brought out, such as the adoption of a minor flight from kitchen quarters to main half-landing, thereby gaining much of the advantage of a complete servants' stair.

Mr. Lishman mentioned a practical method of determining head-room, by describing an arc from any point of the nosing line at a radius of 5 ft., which should clear all soffites.

Mr. Gerald Horsley, summing up the discussion, emphasised the importance of town staircases where they act as an approach to the reception-rooms, as compared with those in country houses. A stair within walls should be 5 ft. wide. A house of Mr. Shaw's, in Queen's-gate, was instanced as another excellent example of stair within stair. A house staircase with a well could hardly be placed in a space less than 9 ft. square. England was the best place to study the "string" types of stair, and Genoa or Rome the palatial approach stair.

ENGINEERING SOCIETIES.

SOCIETY OF ENGINEERS.—The first ordinary meeting of the Society of Engineers for the present year was held on Monday, the 5th inst., at the Royal United Service Institution, Whitehall. Mr. Nicholas J. West, the President for 1905, first occupied the chair, and presented the premiums awarded for papers read during that year, viz.:—The President's Gold Medal to Mr. Sherard Cowper-Coles for his paper on "The Metallic Preservation and Ornamentation of Iron and Steel Surfaces"; the Bessemer Premium of Books to Mr. Ernest Romney Matthews for his paper on "The Parade Extension Works at Bridlington"; a Society's Premium of Books to Mr. Benjamin Laurenson Bradley for his paper on "The Grindleford Stone Quarries and their Working"; and a Society's Premium of Books to Mr. William Pollard Digby for his paper on "Statistics of British and American Rolling Stock." The thanks of the Society were also accorded to Mr. B. H. Thwaite for his paper on "The Transport Possibilities of our Inland Navigable Waterways"; to Messrs. C. S. Meik and Walter Beer for their paper on "The Improvement of London Traffic"; and to Mr. A. H. Smith for his paper on "Machine Drills for Hard Rock." Mr. West then introduced the President for the present year, Mr. Maurice Wilson, who then proceeded to deliver his inaugural address, in the course of which, reminding the members that he had for a number of years been engaged in the early education of engineers, he expressed his opinions as to the training of youths preparatory to their engineering education. He stated that a boy during the latter part of his school life should be prepared, as far as possible, in the direction that would be most likely to benefit him in after life. He was certain that, at any rate, in reference to engineering, that was not done in the majority of cases. Pointing out that it was fair to take the average boy as an example, he asked how was a boy at one of our public schools taught his mathematics. A boy was not likely to become a good mathematician unless he learnt to follow up with intelligence the various stages of his mathematical training. Many youths began their engineering education, having taken no possible interest in their mathematics at school. He then referred to the bad spelling and execrable handwriting of the youth of the present day, and was emphatic as to the desirability of boys being refused admission to public schools unless they had been properly taught those subjects elsewhere. It was a fact that a large number of youths left school without the slightest idea how to reason out quite simple matters, and whose powers of exercising their common-sense was of the crudest description. A boy was never too young to be taught to think for himself, and problems and other mathematical matters should be placed before him from a common-sense point of view. He did not wish to reflect on the masters, who were a splendid and capable body of men, but on the present condition of rush and hurry, and the necessity for taking boys through a vast quantity of matter in preparation for the many examinations which were held during school life. Taking it broadly, it was not the boy from the large public school, but rather the one from one of the smaller public schools, or from a private school, who was a reasonable being. That pointed to the fact that the forms at many of our large public schools were too big, and that in consequence a master could not give anything approaching to individual attention to the boys under him. The general effect of that state of things was that, on leaving school, a youth usually found himself so woefully ignorant that he was obliged to spend a considerable time in working up all those necessary matters for his engineering education which he ought to have learnt at school, and that without any reference to higher mathematics. As, at any rate, a partial remedy for that, the President suggested that the large forms should be divided, and, if necessary, subdivided, so that a master should not have more than from fifteen to twenty boys to teach at a time. The Institution of Civil Engineers were moving in the matter, and as theirs was the opinion most likely to carry weight, they should be cordially supported by all engineers.

ARCHITECTURAL SOCIETIES.

MANCHESTER SOCIETY OF ARCHITECTS.—The eighth meeting of the students of this Society was held on Tuesday last week, and presided over by Mr. Henry Goldsmith, who, after a few preliminary remarks, called upon Mr. James Norquoy to read a paper entitled "Hints on Quantity Surveying." The lecturer, previous to giving the "hints," dealt very fully and ably with the merits of the different methods of taking off quantities. He also showed and gave instances how words had unnecessarily been inserted in the description, to the detriment of the quantities. One special case he quoted was where the word "soil" had been inserted after "excavating and removing," the result being that the contractor refused to remove the clay which underlaid the soil unless an additional price was paid him. The Chairman in his concluding remarks corroborated a number of the statements made by the lecturer, and illustrated them with instances which had come under his own observation. He strongly advocated the dividing of each trade bill into heads, as, for instance, the placing of all items in connexion with floors under a heading of "Floors."

LIVERPOOL ARCHITECTURAL SOCIETY.—We were mistaken in mentioning the address of Mr. T. T. Rees last week ("Points for the Consideration of Municipal Councils") as that of the President of the Liverpool Society; Mr. Thicknesse is the President. We were under an impression that the paper from which we made the extract was an address from the chair; it appears that it was an ordinary Sessional Paper.

Fifty Years Ago.

FROM THE *Builder* OF FEBRUARY 9, 1856.

REMOVAL OF TENANTS UNDER THE NEW METROPOLITAN BUILDING ACT.

AT Worship-street the other day Mr. Charles Reeves, the Surveyor to the Commissioner of Sewers, attended before Mr. Hammill to obtain from him a peremptory order for the expulsion of the occupants of certain houses at Mile End, under the following circumstances:—

Mr. Reeves stated that the prosecution was the first of the kind which had been instituted under the 18th and 19th of the present reign. cap. 122, and which only came into operation on January 1 last. The section of the statute under which he made the application was the 80th, the terms of which enacted that, in all cases where any structure had been certified by a competent surveyor to be dangerous to its inmates, a justice of the peace might, if satisfied of the correctness of such certificate, upon the application of the Commissioners, by order under his hand, direct any inmates of such structure to be removed therefrom by a constable or any peace officer; and if such inmates had no other abode, he might require them to be received into the workhouse established for the reception of the poor of the place in which such structure was situated. In pursuance, therefore, of an intimation he had received from the police authorities, he had that morning proceeded to inspect a locality called Spring-gardens, at Mile End Newtown, where he found a number of houses, consisting of twenty-one in all, the whole of which were in such a state of ruinous dilapidation, as not only to place the lives of the inmates themselves in imminent danger, but also those of any persons passing through the street. It was manifest such a state of things could not be allowed any longer to continue; and he had, therefore, forwarded a certificate to that effect to the Commissioners, who had at once directed him to take the necessary steps for the removal.

After some conversation, the magistrate affixed his signature to the order, and it was handed over to the officers that it might be carried into execution forthwith.

Illustrations.

SCULPTURE MEDALLIONS, INGRAM HOUSE.

THE oval medallions, illustrated in the plate, were modelled by Mr. Broad, of Messrs. Doulton & Co., and are originals burnt as terra-cottas at the Lambeth Potteries, casts being only taken in the case of one pair, the "Youth" and "Age," which were further reproduced in salt glaze, green on a deep blue ground, as points of colour to decorate the spandrils of the main arch of the entrance bay. The terra-cottas, as used internally, are unglazed, and have been coloured with the decoration of the walls. They are placed in pairs, grouped with the large Venetian windows which form the end feature of the principal club-rooms, "Spring and Summer" in the dining-room wing, "Autumn and Winter" in the smoking-room, and "Youth and Age" in the library. These ovals are 2 ft. 6 in. in height, and are burnt in one piece.

The figure of Apollo is a casting in lead, reproduced by Italians in London by the "cira perduta" process, from the clay model by Mr. W. Fagan, of Chelsea. This spandril is about 63 ft. from the ground, and the figure is half as large again as life-size. The photograph was taken from the scaffolding by Mr. Goldsburgh, of the architect's office, and shows some of the surrounding brick detail of the main cornice, etc.

The quatrefoil plaster panel, "Hercules," is the centrepiece of the deeply-coffered ceiling of the middle portion of the dining-rooms at Ingram House. It is about 4 ft. 6 in. square, and was modelled and cast at the building as part of the decorative plaster work carried out by Messrs. Aubrey & Co., of Woking. The design is based on an old French example at Toulouse, which is curiously cut out of the solid planks of the

"Apollo": Cast-lead Figure, Exterior of Ingram House.

ceiling. The treatment has been adapted to the difficult lighting of its position described above. A. T. BOLTON.

PULPIT AND SCREEN, SAN MINIATO, FLORENCE.

THE marble screen dates from XIIth century, and is one of the most beautiful specimens of marble inlay work to be seen in Italy. The screen is of cream marble and the inlay in ebony black, with very small portions of red, as, for instance, the demon's tongue. The columns to the pulpit are of red marble.

The font in Pisa Baptistery is of exactly similar design, although of much later date.

The niello pavement in the nave of the church, according to an inscription, was executed in 1207.

The church has lately been restored. The exterior is in keeping with the original work, but the interior has been greatly disfigured by painted imitation marble walls and string mouldings. LIONEL U. GRACE.

DESIGN FOR MUNICIPAL OFFICES, TORQUAY.

IN this competition, held last year, the varying levels of site were such as to warrant consideration in the lay out so that the due advantages of the site could be obtained, and at the same time bearing in mind the dominant idea of concentration of departments, coupled with easy working arrangement. The principal entrance to the municipal offices was arranged from Marychurch-road, with entrance to the town hall and library from Castle-circus and Leamington-road respectively.

The plans being sufficiently explicit, detailed description is unnecessary. A crescent-shaped front, with forecourt bridged across to main entrance, was adopted, as it was considered a solution of the difficulties of levels. The library was purposely planned as a separate building capable of erection and being complete in itself, this being one of the conditions of competition. The architectural treatment is an attempt to depict a restrained monumental and solid dignity conceived to be best adapted to the use of local material, which is blue-grey limestone, and to this class of building. The frieze surmounting the whole building was intended to be of Ham Hill stone.

The drawing was exhibited at the last Royal Academy. E. VINCENT HARRIS.

HOUSE AT MASSINGHAM, NORFOLK.

THIS house has recently been completed at Massingham, Norfolk, from the designs of Messrs. Edmund Wimperis & Best.

It is faced with red brick and Ancaster stone, the roof being Broseley tiles.

The contract for the house, lodge, and stables was 7,624*l.*, and the contractors were Messrs. Cubitt & Gotts, of Ipswich, the clerk of works being Mr. Chas. Stacey. The Gilmour Door Company supplied the hardwood doors, and the carving was done by Mr. Jago, of London.

The plan and elevation were both largely influenced by the owner's wish to reproduce the design and character of an existing Georgian house in the same county.

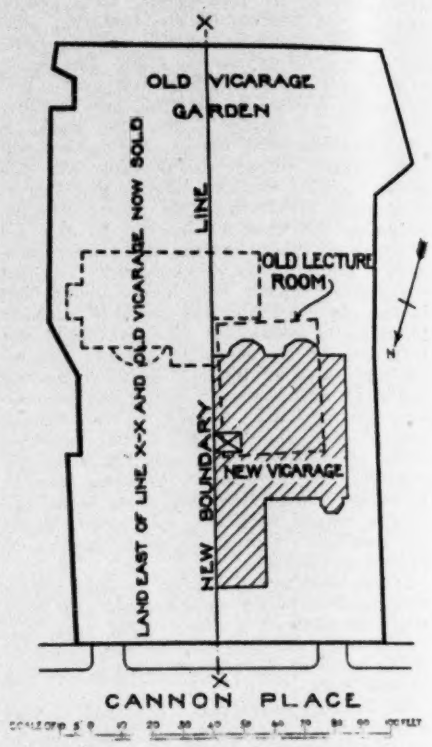
CHRIST CHURCH VICARAGE. HAMPSTEAD.

THE main problem to be solved in the design of this house was how to get the accommodation required on a somewhat restricted site without altogether ruining the garden. Half the garden of the old vicarage, together with the house itself, having been sold it was necessary to place on the remainder of the site, whereon had stood a large one-storied lecture-room, the new vicarage, which was to contain, besides the ordinary accommodation, a vicarage-room, where meetings and classes could take place without disturbing the household of the vicar.

The garden is situated on the heights above London: the southern rooms therefore have a commanding view over roofs and spires to the Surrey Hills beyond. No lighting (except by the area over pantry and service lobby) was to be obtained along the eastern boundary. The above were the conditions which suggested the disposition of the plan.

There is a drawing-room on the first floor over the dining-room. Seven bedrooms (including two attics), dressing-room, and bathroom complete the accommodation.

The outside facings are of red pressed bricks, supplied by the Heather Brick and Terra-cotta Company, Leicestershire. The copings and chimney bases are of Campden



Christ Church Vicarage, Hampstead. Block Plan.

stone. The roofs are covered with Broseley tiles.

The contractor was Mr. John Bentley, of Waltham Abbey, Essex. Our illustration is from a drawing exhibited last summer at the Royal Academy by Mr. A. Maryon Watson (Messrs. J. H. & A. M. Watson), the architect of the house.

"Hercules": Ceiling Centre-piece in Plaster, Ingram House.

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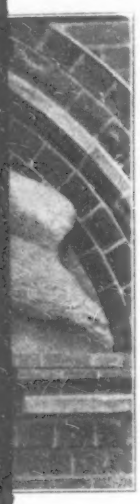

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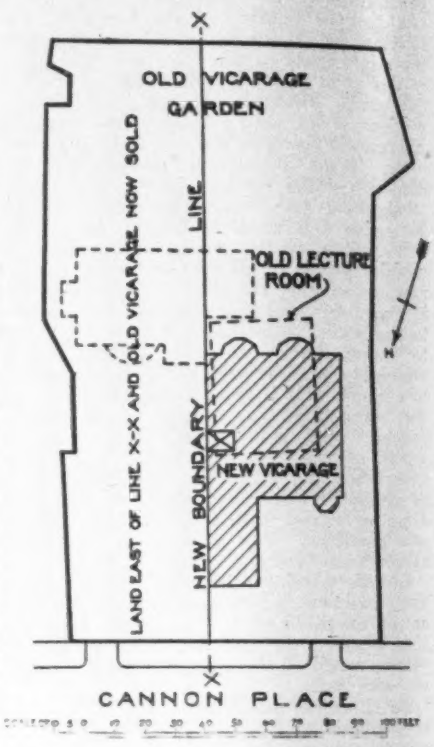

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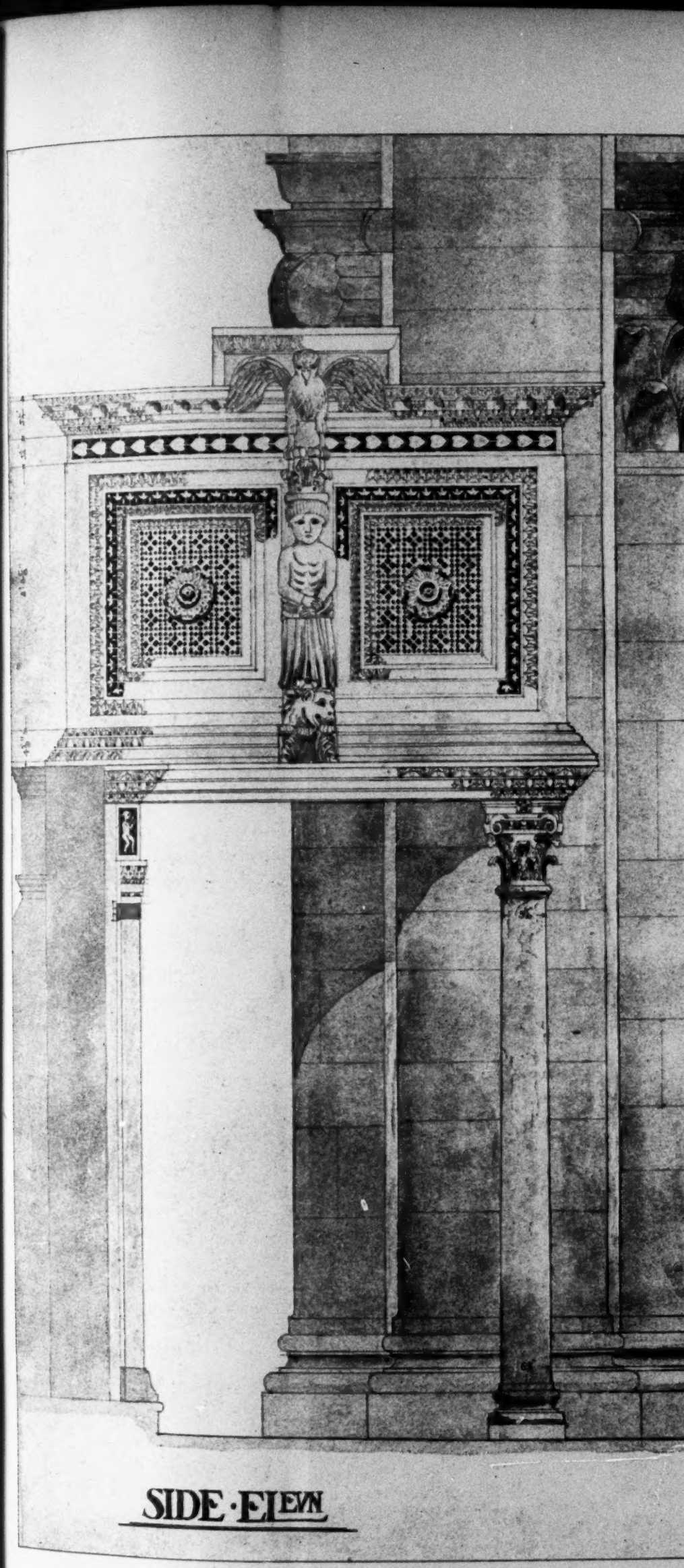
INK PHOTO. SPRAGUE & C° L™ 4 & 5 EAST HARDING STREET, FETTER LANE, E.C.

A PANELS, INGRAM HOUSE: "THE FOUR SEASONS," AND "YOUTH AND AGE."
MODELLED BY MR. BROAD (MESSRS. DOULTON & CO.)



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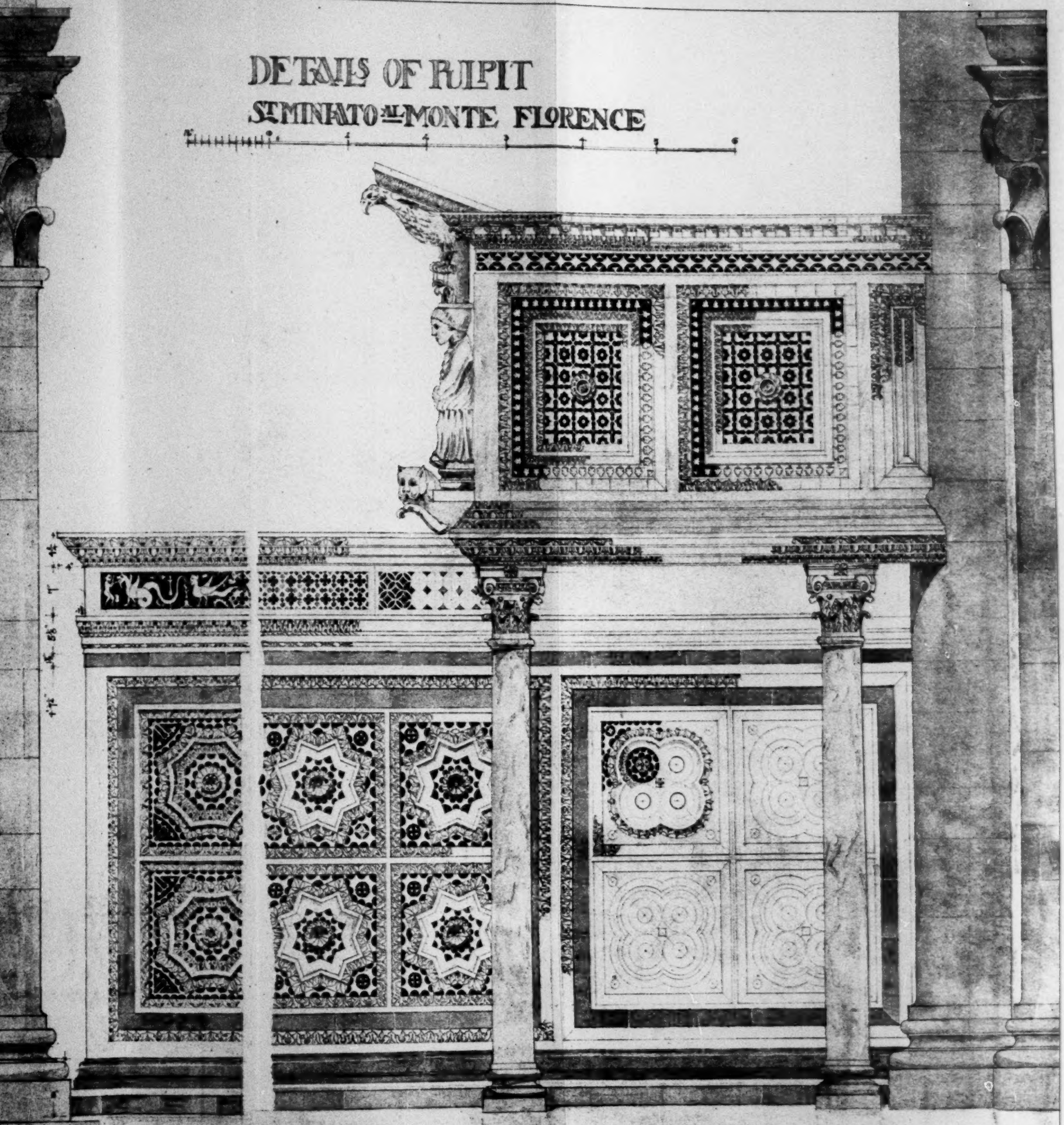

Lunettes Greek.

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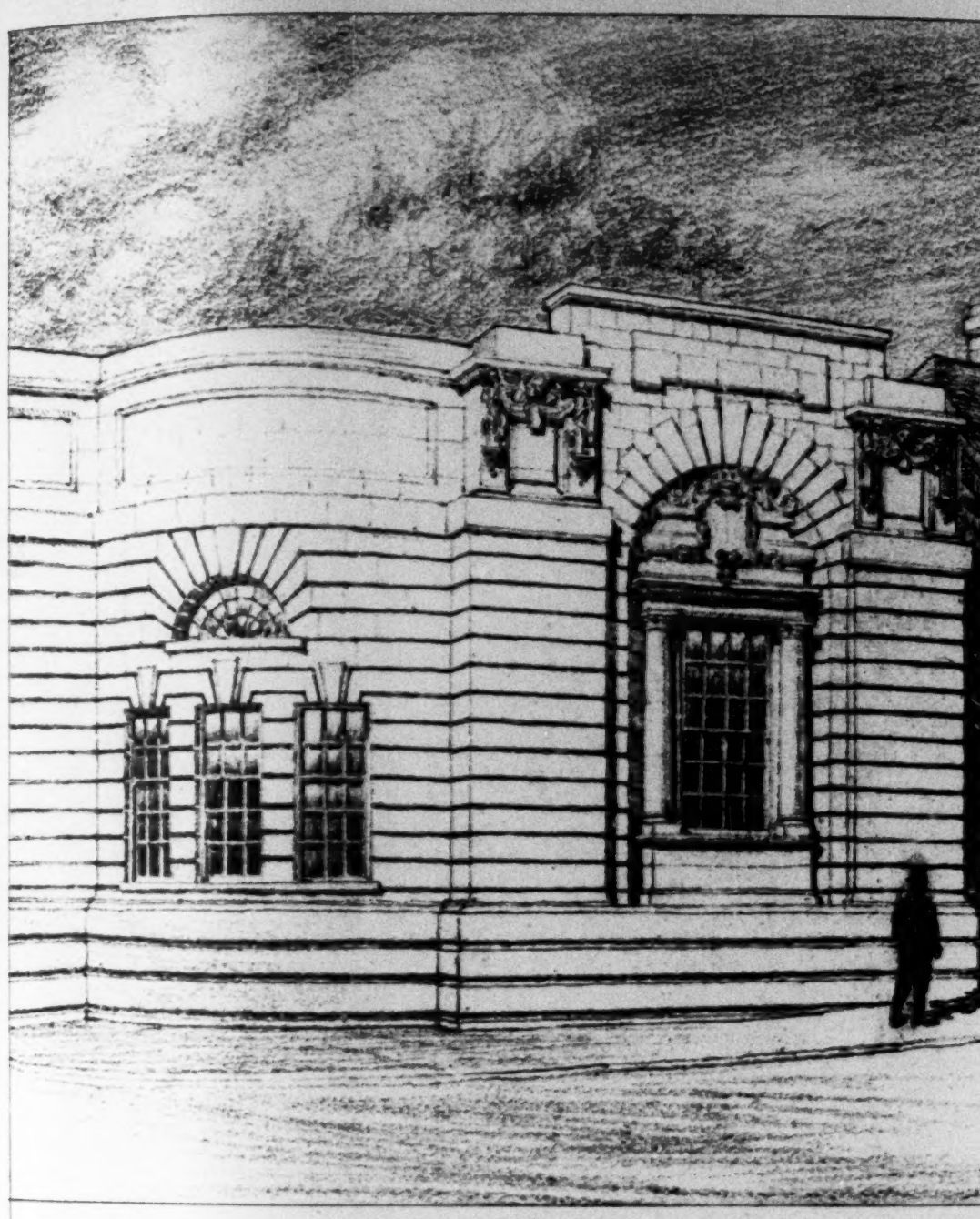
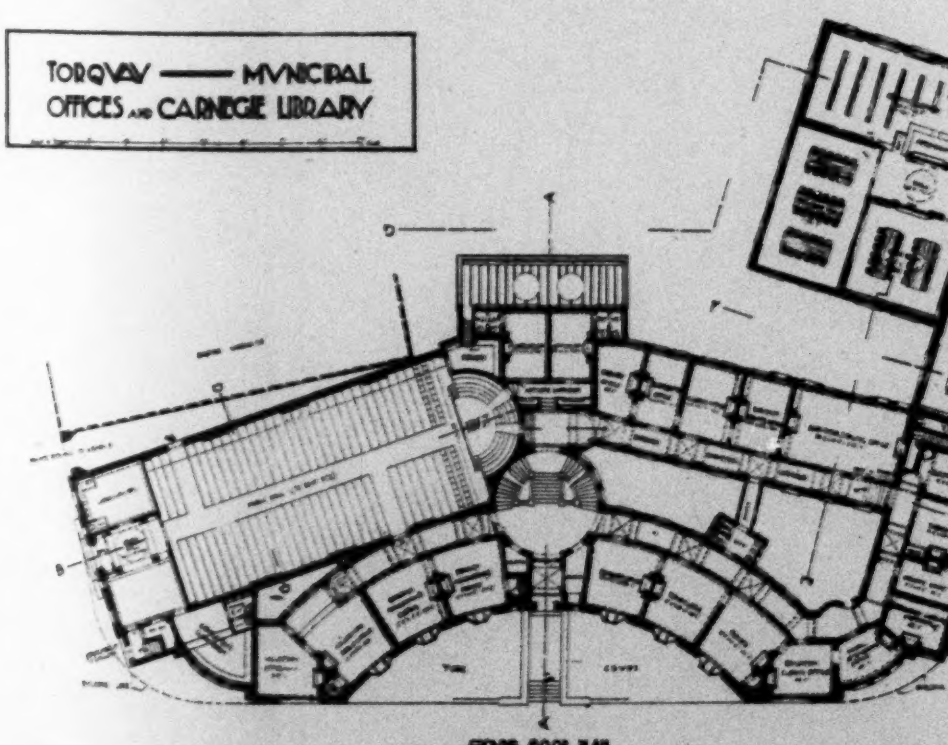
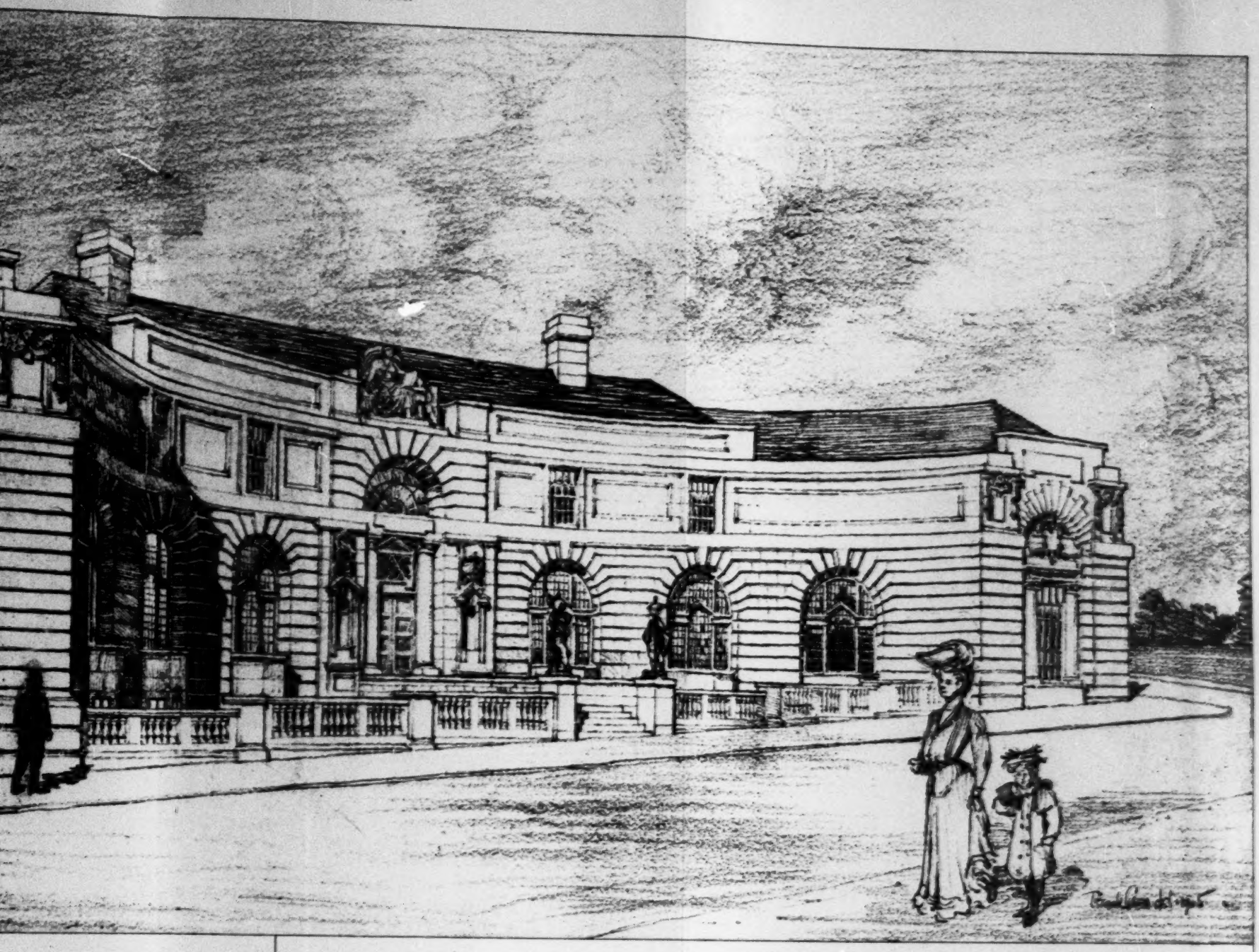
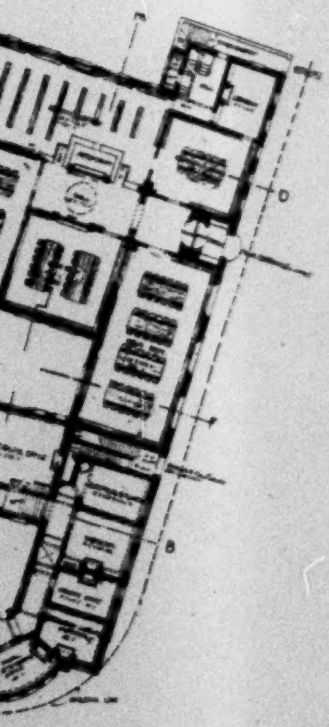


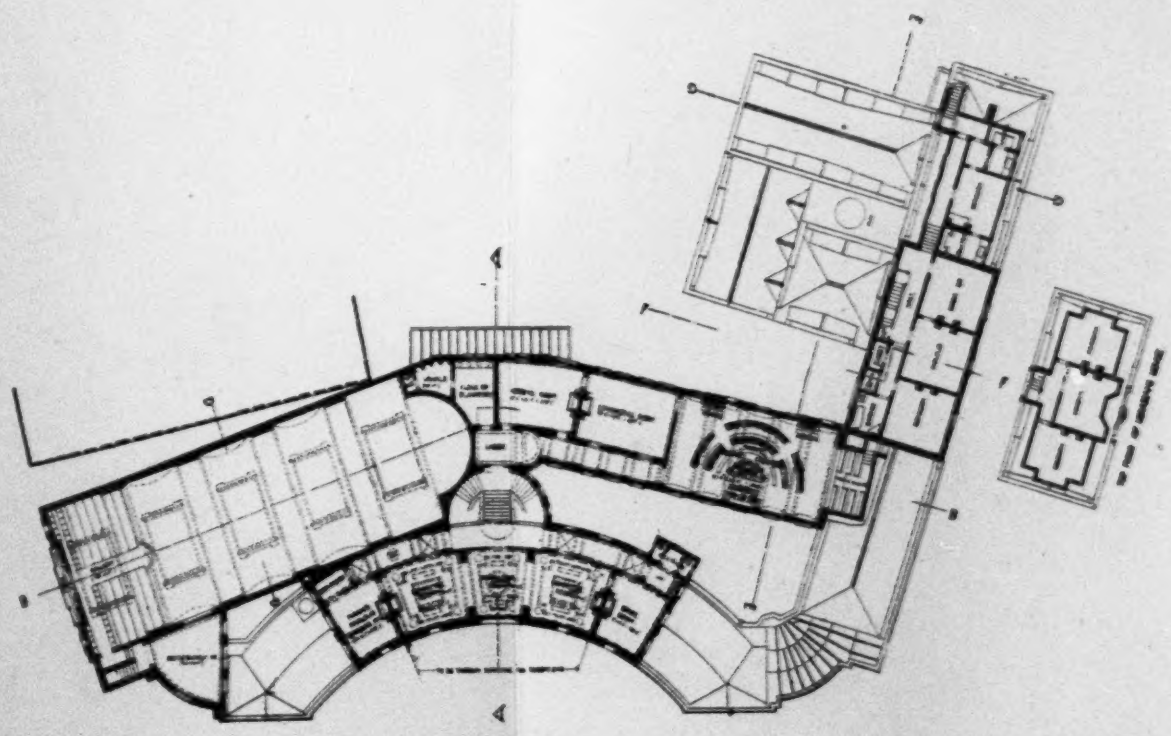
TORQUAY —— MUNICIPAL OFFICES AND CARNEGIE LIBRARY



GROUND FLOOR PLAN







FIRST FLOOR PLAN

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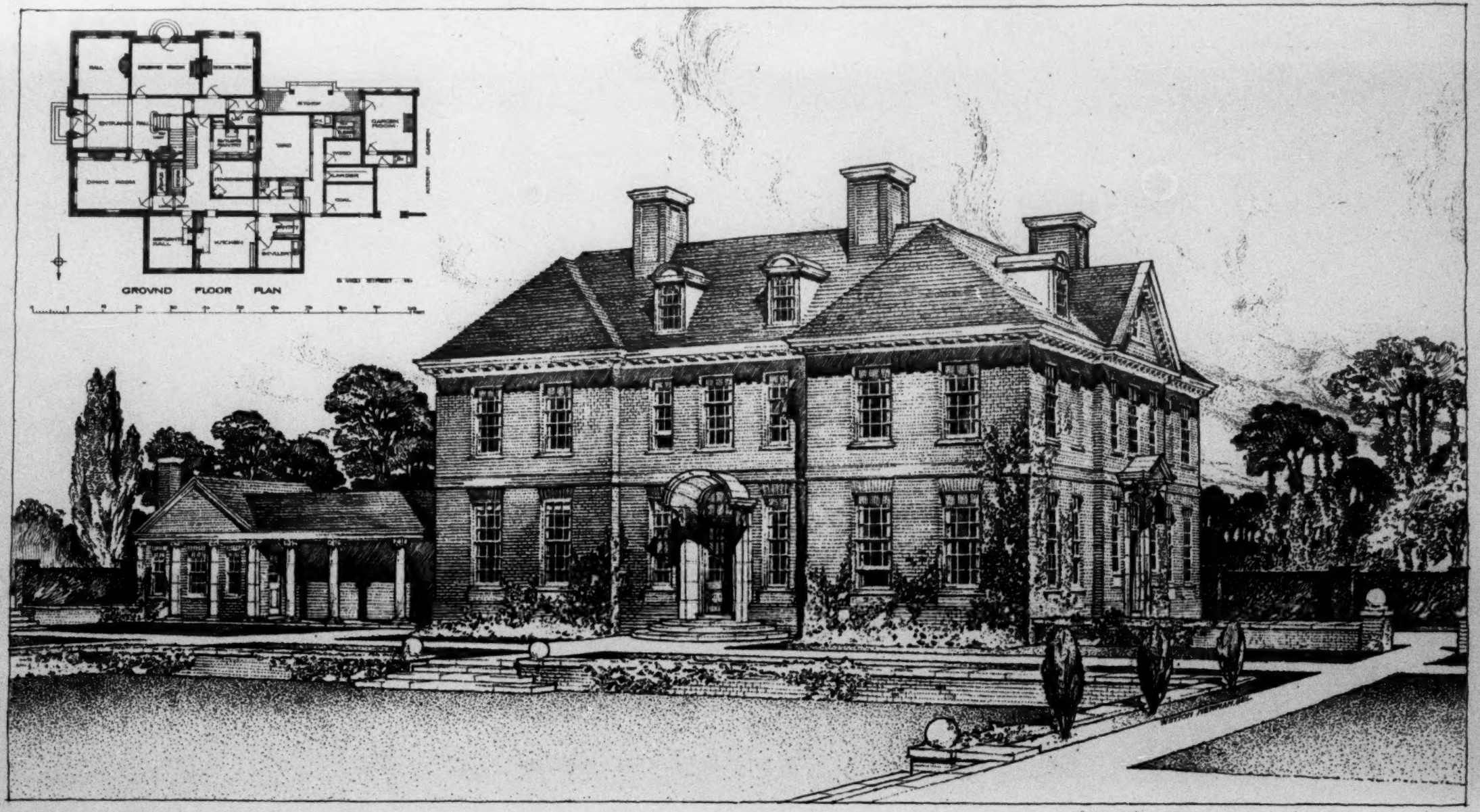
DESIGN FOR TORQUAY MUNICIPAL OFFICES.—By Messrs. Harris & Towse.



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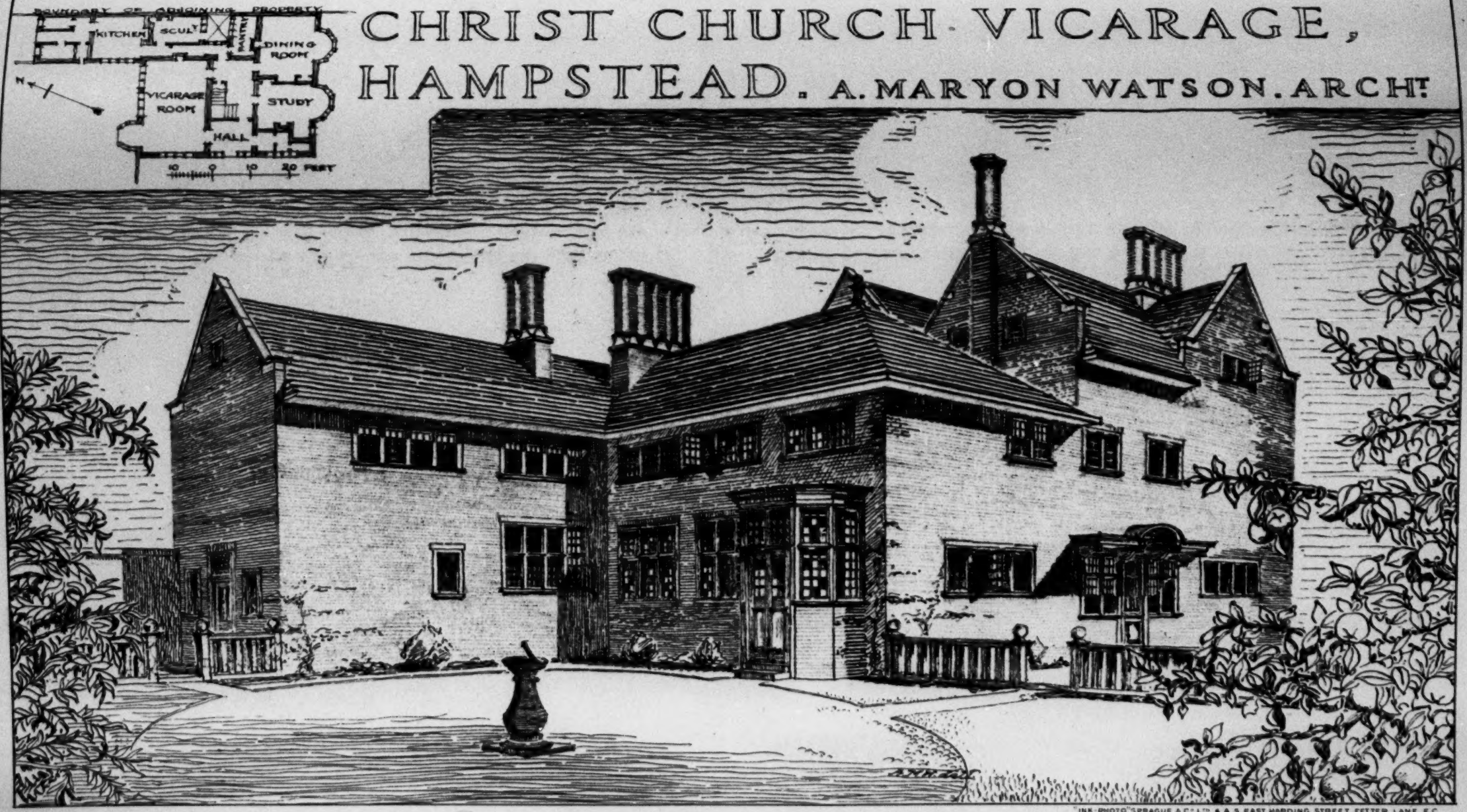
HOUSE AT MASSINGHAM, NORFOLK.—Messrs. Wimperis & Best, Architects.

CHRIST CHURCH VICARAGE,

CHRIST CHURCH VICARAGE, HAMPSTEAD. A. MARYON WATSON. ARCHT.



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COMPETITIONS.

HACKNEY CENTRAL LIBRARY.—The Baths Committee of Hackney Borough Council reported on Monday having granted an application by the Public Libraries Committee for the use of the gallery of the King's Hall on February 26, 27, and 28 for the purpose of exhibiting the architects' designs for the proposed Central Library.

FREE LIBRARY, CROMPTON.—Mr. G. H. Willoughby, F.R.I.B.A., of Manchester, has been appointed assessor by the Crompton District Council in connexion with the Carnegie Free Library, for which about fifty sets of drawings have been received.

BOOKS RECEIVED.

A HISTORY OF ENGLISH FURNITURE. By Percy Macquoid, R.I. The Age of Walnut. (Lawrence & Bullen. 2*l.* 2s.)

THE ROCK TOMBS OF EL AMARNA. Part III. (Archæological Survey of Egypt). By N. de G. Davies. (Kegan Paul, Trench, Trübner, & Co.)

NEW MAP OF METROPOLITAN RAILWAYS, TRAMWAYS, ETC. (Edward Stanford. 10s. 6d.)

THE YEAR'S ART: 1906. Compiled by A. C. R. Carter. (Hutchinson & Co. 3s. 6d.)

CREMATORIA IN GREAT BRITAIN AND ABROAD. By Albert C. Freeman. (St. Bride's Press.)

THE ROMAN FORUM. By C. Hudsen. Translated by Jesse B. Carter. (Loescher & Co. Rome. 4s.)

THE MUNICIPAL YEARBOOK FOR 1906. Edited by R. Donald. (Edward Lloyd.)

Correspondence.

APPOINTMENT OF DISTRICT SURVEYORS.

SIR,—It is said that the scheme devised by the Building Act Committee of the London County Council was carried by one vote, and it is rather remarkable that the three builders who must have had long experience of the Act and of the District Surveyors were opposed to the report; in fact, one made some very sensible remarks against it. The Chairman seemed anxious for the change; he is an Irish officer without practical experience of building.

Most of the surveyors would benefit by having a salary, and as there is no doubt that building in London will decrease instead of increase, the next ten years will produce about 10,000*l.* less per annum in fees than the past ten years.

One member mentioned that a large fee could be charged for a small alteration to a large building; this is true as the Act stands, but it is well known that the surveyors in such cases make a very large abatement and charge a nominal fee, when, if the fees were collected on behalf of the Council, no such abatement could be legally made.

For more than sixty years the present system has worked well. Men of experience would not care for the appointments under the new scheme, and after many attempts to destroy the position of the District Surveyor they should now be left in peace to pursue their useful work.

The present system of appointment since 1900 is not satisfactory, as a man may be insolvent during his term of office, or if he struggles on with fees varying from year to year, there is no pension at the end, and after giving the best years of his life to the work, he may end his days in the workhouse.

Both the professional societies are in favour of the old system, and there is nobody at the County Hall with any practical experience of the working of the Building Act.

The "Architect" who wrote last week mixes up surveyors and sanitary inspectors, and seems to ignore the fact that District Surveyors know all the troubles of architects, having themselves been actively engaged in the practice of the profession. His ideas are ideal, as a very small proportion of jobs have an architect, and even experienced architects are glad to have the assistance of an expert in the building laws.

Your "Note" is excellent; worthy of the journal so long conducted by a District Surveyor—the late Mr. George Godwin, who was so highly esteemed by the profession and the public.

FAIR PLAY.

USEFUL WORK FOR THE UNEMPLOYED.

SIR,—Having regard to the serious depression now existing in the London building trade, and the large number of men connected with it who are at present out of employment, may I be allowed to suggest to those property owners who are able to afford the expense, that the most effectual way of relieving the prevailing distress is to put in hand all necessary repairs, painting, etc., with as little delay as possible.

It needs no argument of mine to prove that money spent in this way does far more good than much larger sums given in the form of charity, or as subscriptions to funds for the relief of the unemployed.

One cannot go about London without being struck with the state of disrepair into which so many houses are allowed to fall; if only a tithe of the work that is required were undertaken, very much of the distress that at present exists would quickly disappear.

I ought perhaps to add that I have no personal interest in the building trade, either direct or indirect.

JOHN PRICE NEWTON.

The Student's Column.

SOME MATHEMATICAL METHODS AND USEFUL DATA FOR ARCHITECTS.—V.

SHORT CUTS TO MULTIPLICATION.

SOME knowledge of the properties of numbers is most useful, because it facilitates the simplification of various calculations performed by the ordinary rules of arithmetic. It would be inappropriate in the present series to devote attention to such properties as a special subject for discussion, but a few of them will be mentioned in places where their employment suggests the abridgment of arithmetical processes. This article and its immediate successors will deal with such of the primary and derived rules of arithmetic as lend themselves to the adoption of time-saving methods likely to be of service to the busy professional man.

As a matter of convenience our notes are classified under the heads adopted in ordinary text-books.

Contracted Method of Multiplication.

Rule.—Reverse the multiplier so that the units place comes under that figure of the multiplicand which is the lowest place of the required product.

This method is of much assistance in the multiplication of numbers containing or consisting of decimal fractions, or vulgar fractions that can be converted mentally to decimal equivalents. It is particularly intended for use in calculations where the number of decimals in the product need not be so great as the number in the multiplicand and multiplier. To multiply into each other two numbers containing several decimal figures and afterwards to strike off several decimals from the product obviously involves useless expenditure of time, and does not add to the practical value of the result.

For the purpose of comparison the following examples are worked by the ordinary method as well as by the contracted method. It should be noted in connexion with the latter that when a figure, rejected from any of the individual products has the value of 5 or more, the figure next to it should be increased by 1.

Example (1): Multiply 58·645 by 8·7341 and bring out the product to three places of decimals.

Contracted Method.	Ordinary Method.
58645	58·645
14378	8·7341
469160	58645
41052	234580
1759	175935
236	410515
6	469160
512213 = 512·213	5122112945 = 512·211+

In working upon the abridged method we proceed as follows:—

Line (1).—Multiply by 8 to obtain the product 469160.

Line (2).—Multiply by 7, thus: $5 \times 7 = 35$, the figure 5 being rejected and the figure 3 carried to the next product; but, as the rejected figure has the value of 5, we carry 1 as well as the 3, and add 4 to the product of 4×7 or $4 + (4 \times 7) = 32$, writing down the 2 and carrying 3, and so on for the rest of the line. In this way the product 41052 is obtained.

Line (3).—Multiply by 3: first $5 \times 3 = 15$, the 5 being rejected and the 1 carried mentally, together with 1 to make up for the 5 rejected; next $2 + (4 \times 3) = 14$, the 4 being rejected and the 1 carried on; then $1 + (6 \times 3) = 19$, the 9 being set down and the 1 carried, and so on for the rest of the line, until we get the product 1759.

Line (4).—Multiply by 4: first $5 \times 4 = 20$, reject the 0 and carry the 2 mentally; next $2 + (4 \times 4) = 18$, reject the 8, but, as this is more than 5, carry 2 instead of 1; then $2 + (6 \times 4) = 26$, write down the 6 and carry the 2, and so on to the end of the line, giving the product 236.

Line (5).—Multiply by 1, and here, as the figure 8 preceding the figure to be set down is more than 5, we carry 1 and write 6 on this line.

The sum of the various products is 512213, and by inserting the decimal point in the correct position we get 512·213.

Example (2): Multiply 67·5941832 by 9·315764 and bring out the product to three places of decimals.

Here we can abridge the multiplicand to 67·594 and the multiplier to 9·3158, without leading to sensible error, and, working out the result by both methods as in example (1), we have

Contracted Method.	Ordinary Method.
67594	675941832
85139	9315764
608346	2703767328
20278	4055650992
676	473159*2824
338	3379709160
54	675941832
629692 = 629·692	2027825496
	6083476488
	6296914584639648 = 629·691+

Inspection of the results in the preceding examples shows that the differences are quite unimportant, and that the product given by the contracted method may be regarded as sufficiently accurate for all practical calculations based upon data that are themselves approximate, and for many others that have to be made in every-day practice.

The contracted method can also be employed for the multiplication of large whole numbers in cases where absolute accuracy is not essential in the units, tens, hundreds, or thousands places. Thus if we have to multiply a number of eight figures by another number of four figures, two, three, or even four figures in the product may be replaced by ciphers without seriously invalidating the general result.

For instance, take the number 83641258, which consists of:—

8 ×	10,000,000
3 ×	1,000,000
6 ×	100,000
4 ×	10,000
1 ×	1,000
2 ×	100
5 ×	10
8 ×	1

These figures show how insignificant are the quantities represented by the digits at the right hand in comparison with those at the left hand, and, as a matter of fact, the collective value of the four last numerals 1258 is only $\frac{1258}{83641258}$, or about $\frac{1}{66\frac{1}{500}}$ of the whole number. Hence it is obvious that the collective value of the last three, or of the last two, numerals is of little practical account, as shown by the following example:—

Example (3): Multiply 83641258 by 4657, expressing the last seven figures of the product in ciphers.

Contracted Method.	Ordinary Method.
8364 (1258)	83641258
7564	4657
33457	5854888 6
5018	418206250
418	501847548
50	334565032
38952	389517338506 = 389,517,338,506

which, after adding the necessary ciphers = 389,520,000,000.

For the purpose of comparison we have worked out the exact product by the ordinary method and the approximate product by the abridged method. It will be seen that the difference is 2,661,494, which involves an error of only about $\frac{1}{146000}$ in excess of the exact product.

Of course, discrepancies of the kind might be of importance if the units were pounds, shillings, or even pence, or if they represented quantities of materials to be bought or sold. But in approximate calculations and estimates such a discrepancy would constitute no disadvantage, and the same would be the case if the two numbers multiplied into each other formed the numerator of a fractional term in a formula so that the product had to be divided by some other large or comparatively large number.

Multiplication by Factors of Composite Numbers.

Rule.—Multiply successively by factors of the multiplier.

This is a method that will be found very

convenient for mental calculations if the multiplier is a number that can be divided readily into factors.

The following are simple illustrations :—

Example (1) : Multiply 521 by 64.

Here $64 = 4 \times 4 \times 4$, or $8 \times 4 \times 2$, and the process is :—

(a)		or (b)	
521			521
4			2
2084			1042
4			4
8336			4168
4			8
33344			33344

Example (2) : Multiply 432 by 135.

Here $135 = 3^3 \times 5$, or $(3 \times 9) \times 5$.

Arranging the factors in different orders, we have

(a)		or (b)	
432			432
9			3
3888			1296
5			5
19440			6480
3			9
58320			58320

Multiplication by Incomposite Numbers.

Rule.—Multiply by the factors of the nearest composite number, and add to or subtract from the last product the product of the multiplicand and the difference between the nearest composite number and the multiplicand.

Example (1) : Multiply 109 by 67.

Here $67 = 64 + 3 = (8 \times 8) + 3$ and the process is :—

109
8
872
8
6976
327 = 109 × 3
7303

Example (2) : Multiply 181 by 47.

Here $47 = 48 - 1 = (6 \times 8) - 1$ and the process is :—

181
6
1086
8
8688
181 = 181 × 1
8507

The method of subtracting a multiple of the multiplicand from a tentative product can be applied very conveniently (1) when the multiplier consists entirely of *nines*, or (2) when the multiplier ends with the figure 9.

Multiplication by Any Number of Nines.

Rule.—Place as many ciphers at the end of the multiplicand as there are *nines* in the multiplier, and subtract the multiplicand from the result.

Example (1) : Multiply 83 by 9.
Here $83 \times 9 = 830 - 83 = 747$

Example (2) : Multiply 824 by 99.
Here $824 \times 99 = 82400 - 824 = 82,566$.

Multiplication by Any Number Ending in Nines.

Rule.—Multiply by the whole number next above the multiplier, and subtract the multiplicand from the result.

Example (1) : Multiply 45 by 19.
Here $45 \times 19 = 45 \times 20 - 45 = 855$.

Example (2) : Multiply 334 by 59.
Here $334 \times 59 = 334 \times 60 - 334 = 19,706$.

The same principle can also be applied to multiplication by any numbers conveniently near in value to multiples of 10.

Multiplication by Any Number Near to a Multiple of Ten.

Rule.—Multiply by the multiple of ten next above or below the given multiplier, and subtract or add the product of the multiplicand and the difference between the given multiplier and the multiplier actually used.

Example (1) : Multiply 35 by 28.
Here $35 \times 38 = (35 \times 40) - (35 \times 2) = 1,330$.

Example (2) : Multiply 68 by 31.
Here $68 \times 31 = (68 \times 30) + 68 = 2,108$.

Multiplication by Components of the Multiplier.

Rule (1).—Divide the multiplier where possible into components produced by multiplication of one or more parts of the multiplier.

Example (1) : Multiply 678432 by 9612.

Here it is evident that

$9612 = 9600 + 12$
and $9600 = 800 \times 12$

Hence the process is as follows :—
Multiply the number by 12 and the first product by 800.
Thus :

678432
9612
8141184
6512947200
6521088384

Example (2) : Multiply 573698 by 196284.
Here the multiplier consists of :—

$196,000 = 280 \times 700$
$280 = 4 \times 70$
$4 = 4 \times 1$

Hence the process of multiplication is as follows :—
Multiply the number by 4, the first product by 70, and the second product by 700.
Thus :

573698
196284
229 792
16 635140
112444908000
112607738232

Example (3) : Multiply 573698 by 392567.
Here the multiplier consists of :—

$392,000 = 560 \times 700$
$560 = 7 \times 80$
$7 = 7 \times 1$

Hence the process of multiplication is as follows :—
Multiply the number by 7, the first product by 80, and the second product by 700.
Thus :

573698
392567
4015886
321270840
224889616000
225214702766

There are many other numbers besides those given in the last three examples that can be divided into parts bearing definite relations one to another such as enable the process of multiplication to be abbreviated. Familiarity with factors and measures of numbers will enable the student to detect properties that escape the unobservant eye. Where the multiplier cannot be analysed in the manner explained, the following modified rule will often permit the desired resolution to be effected :—

Rule (2).—Add to or subtract from the last digit or the last two digits of the multiplier such a number as will make it possible to divide the modified multiplier into components produced by multiplication of one or more other parts. Where the multiplier has been increased subtract from the product the product of the multiplicand and the number added, and where the multiplier has been decreased add to the product the product of the multiplier and the number deducted.

Example (4) : Multiply 678432 by 9609.
Add 3 to the multiplier, making 9612, and proceed as in Example (1).
From the product so obtained deduct $678432 \times 3 = 2025296$. Thus :

6521088384
2025296
6519063088

Example (4) : Multiply 678432 by 9615.
Deduct 3 from the multiplier, making 9612, and proceed as in Example (1).
To the product so obtained add $678432 \times 3 = 2025296$. Thus :

6521088384
2025296
6523113680

THE SURVEYORS' INSTITUTION :
STUDENTS' PRELIMINARY EXAMINATION.

OF the candidates who presented themselves at the Preliminary Examination of the Institution, held concurrently in London and Manchester on January 17 and 18, the following satisfied the examiners :—

C. Abbott (Malton) ;
R. E. Abbott (Malton) ;
A. L. F. Addie (Fleetwood) ;
Guy Aylmer (Aspatria) ;
F. Bacon (Snaresbrook);
E. L. Banham (Crawley) ;
T. N. Barrett (Pendleton) ;
*J. Batstone (Wandsworth Common) ;
D. O. C. Beale (Tunbridge Wells) ;
R. W. Beken (Crouch Hill, N.) ;
F. O. Bembaron (West Hampstead, N.W.) ;
G. Bolsover (Whitburn, Sunderland) ;
G. E. Bond (Thame, Oxfordshire) ;
A. P. Brown (Tunbridge Wells) ;
G. M. Brown (Tring) ;
H. A. Butterfield (Wath-on-Dearne) ;
H. E. Carrington (London) ;
E. V. D. Castiglione (Carlisle) ;
P. R. Chanin (Taunton) ;
R. B. K. Clowes (Kelmarsh, Northampton) ;
C. J. Coade (Brixton Hill, S.W.) ;
R. E. A. Dash (Oxshott);
H. E. Davies (Teddington) ;
A. W. Davson (Notting Hill, W.) ;
A. E. Dickson (Preston) ;
S. J. Dimmock (Watlington, Oxon) ;
M. Dixon (Liverpool) ;
A. B. C. Duke (Maen, Dorchester) ;
B. G. H. Durant (Exeter) ;
G. W. Edwards (Stoke-upon-Trent) ;
J. Escolme (Morecambe) ;
H. F. Pegg (Woodbridge, Suffolk) ;
G. V. Evans (West Marton, Yorkshire) ;
P. L. Pemberton (Mortimer, S.O.) ;
W. D. Everitt (Alton, Hants) ;
S. C. Radburn (Wandsworth Common) ;
R. M. Ewen (Camberley) ;
R. H. Richards (Powis Castle, Montgomery) ;
C. A. Fentum (Upper Norwood, S.E.) ;
A. M. Ridley (Richmond) ;
H. O. Foster (Loughton);
J. P. Risdon (Wivelscombe) ;
P. C. Cambell (Leighton Buzzard) ;
J. J. V. Roberts (Hampton) ;
E. B. Gillett (Streatham, S.W.) ;
N. P. Russell (Lordship Park, N.) ;
H. G. F. Goddard (Taunton) ;
J. W. Scarlett (Ramsgate) ;
H. Griffin, jun. (Battersea, S.W.) ;
L. J. Stevens (Newton Abbot) ;
H. S. Griffiths (Putney) ;
J. E. Stokes (Cannock) ;
T. H. Grimm (London) ;
A. H. B. Talbot-Ponsonby (West Milton, Melplash, S.O.) ;
C. Gude, jun. (St. Margaret's-on-Thames) ;
A. B. Taylor (Fulwood, Preston) ;
R. F. Hankins (Finchley, N.) ;
E. Taylor (St. Albans) ;
M. M. Harrison (Aspatria) ;
W. Tibbits (Warwick) ;
R. O. Harrison (Carlisle) ;
C. A. Travers (New Brighton) ;
W. H. Hayward (Broadstairs) ;
R. J. Trollope (London) ;
R. T. F. Hedley (Finchley, N.W.) ;
R. H. Tucker (Totnes) ;
P. C. Henderson (Clapham Common) ;
A. S. Tyler (Walthamstow) ;
R. T. Hewer (Abingdon, Berks) ;
G. L. Vigers (London) ;
N. H. Hibbs (Bournemouth) ;
S. M. Voy (Hammersmith, W.) ;
J. B. Hingley (Cradley Heath, Staffs) ;
G. N. Warbrick (Kendal) ;
A. H. Hobley (Cheltenham) ;
L. H. Weaver (Kensington, W.) ;
R. B. Hobson (Hampstead, N.W.) ;
M. F. Welsh (Heaton, Newcastle-on-Tyne) ;
E. P. Horne (Hounslow) ;
H. Willett (Bedford) ;
B. F. Hornor (Norwich) ;
W. E. Williams (Ashton-under-Lyne) ;
F. J. Hoskins (Swansea) ;
M. M. Wilson (Woburn) ;
C. S. T. Howe (Leeds) ;
S. F. Wilson (Manchester) ;
H. C. James (West Ham, E.) ;
F. J. Wise (Bury St. Edmunds) ;
E. H. Jones (Bristol) ;
J. P. Wonnacott (Exeter) ;
A. Kirk (Withington) ;
A. F. Wood (Lea, S.E.) ;
F. H. Lloyd (London) ;
C. R. Woodcock (Aldeburgh-on-Sea) ;
G. Lorimer (Rock Ferry, Cheshire) ;
R. B. Woodham (Frinton-on-Sea) ;
E. T. Lovegrove (Sutton Coldfield) ;
R. M. Woolley (Salisbury).
W. S. May (Chislehurst) ;

* Passed at head of list.

COURT OF COMMON COUNCIL.

THE Lord Mayor presided at a meeting of the Court of Common Council at the Guildhall on Thursday last week.

Bishopsgate-street.—In answer to a question, Mr. Liversidge said that the Improvements and Finance Committee had been in negotiation with the London County Council for some time past on the subject of the widening of this street, and though they had so far been unsuccessful, as the conditions of the Council were untenable, they hoped soon to come to a new arrangement by which the County Council would bear an equitable share of the cost. The improvement was too costly to be carried out by the Corporation alone.

Milan Exhibition.—A letter having been received asking the Corporation to take the lead in arranging for an exhibit of the municipal services of London at the Milan International Exhibition, 1906, Sir Thomas Brooke-Hitching gave notice of motion that some of the departments of the Corporation should be instructed by the Court to prepare such an exhibit. He thought that plans and models of the Tower Bridge and the markets would be of great interest.

Appointment of Surveyors.—Reporting on the death of Mr. H. H. Collins, the Dangerous Structure Surveyor for the eastern and southern divisions of the City, the Streets Committee recommended that Mr. Edmund Woodthorpe (the present surveyor of the northern division) should be appointed to act as surveyor for the eastern division, and Mr. Martin F. Saunders (the present surveyor for the western division) should be appointed to act as surveyor for the southern division. This was agreed to.

Heavy Motor Traffic.—On the motion of Mr. Deputy Pearse Morrison, it was agreed to refer the questions relating to the passage of heavy motor traffic through the City to the City Purposes Committee for consideration and report.

THE ROYAL SANITARY INSTITUTE.

A PUBLIC meeting was held at the Crown Court of the Guildhall, Bristol, on Saturday last week, for the purpose of making preliminary arrangements in connexion with the Congress of the Royal Sanitary Institute, which will meet in that city in July next. The Lord Mayor (Mr. A. J. Smith) presided, and explained that the object of the meeting was to make arrangements for the reception of representatives of the Royal Sanitary Institute at the Bristol Congress, to be held from July 9 to July 16. When they considered the importance of the objects of the Institute, and of the business to be transacted, he thought the citizens should do all they could to support the Institute. There was no doubt that a great deal of trouble in the past had been brought about by people not clearly understanding what was best from a sanitary point of view. One of the highest objects they had in municipal matters was to secure the cleanliness of the city in which they lived.

Dr. Wintle (Chairman of the Health Committee) said the meeting was a sequel to that held in August last, when it was unanimously decided to invite the Royal Sanitary Institute to hold their next Congress in Bristol. That invitation had been accepted, and he was pleased to say that Sir Edward Fry had become President of the Congress.

Colonel Lane Notter, who was then asked to address the meeting, said he hoped the Lord Mayor would do the Institute the honour of becoming a vice-president. The annual congresses were held in provincial towns of England for the purpose of bringing forward different views and educating people both by speeches and by the exhibition of most recent appliances adapted for sanitary purposes. It was the aim of the Institute to diffuse healthy knowledge of sanitation, and try and lead people in their own interests to adopt the best measures for safeguarding their health. The Institute had been established some thirty years, and at the present time there were about 3,000 members. He could not over-estimate the valuable help it had received from municipal authorities, who had thoroughly grasped the advantages of these Institute visits, and who lent their aid in the congress's meetings. Another important branch was the training and examination of sanitary officers. The Institute was the first body to undertake this important duty, and there was no more important phase of sanitary work than the duty of the sanitary inspector. The work required tact; such an officer had to be judicial and judicious if he was to carry on his work to the satisfaction of those over him and with that peace and harmony that should exist among his clients. This was not a metropolitan association. It was cosmopolitan, and sought to diffuse knowledge through many centres in the United Kingdom. Sessional meetings were held in provincial towns, and they had been the means of diffusing information and helping in the elucidation of questions that had proved difficult to local officers. In addition, they had the Parkes Museum in London; he hoped at no far distant date it would be removed to a more suitable building than that at present occupied. With the aid of the people of the country the Institute might show at the exhibition the principles of sanitation adapted to all kinds of dwellings. If they could infuse a knowledge governing these things they would lengthen life, increase happiness, and make the country more prosperous.

Mr. W. Whittaker, Chairman of the Congress Committee, spoke of the usefulness of the Congress in affording the opportunity of ventilating matters of public interest. The lecturer on the occasion of the Bristol visit would be Professor Lloyd Morgan, Principal of the Bristol University College. Baillie Anderson, Chairman of the Glasgow Health Committee, would deliver the popular lecture on July 13.

Mr. H. D. Searles Wood spoke of the exhibition, which would be one of the features of the Congress. It was a valuable object-lesson, inasmuch as matters referred to in the papers and discussions were to be seen in concrete form in the exhibition. Already they had the support of five county councils, fifteen county boroughs, and a like number of urban councils, besides school authorities, port sanitary authorities, and fifteen societies.

Mr. Moss Flower explained that at a meeting in August he told them that the provisional subscription list showed that about 150 guineas had been obtained. He also told them that he had in the name of the committee secured the option of certain public halls. Since the acceptance of Bristol's invitation he had in the name of the committee engaged the Victoria Rooms as the reception rooms and the Rifle Drill Hall. The governors of the University College had kindly offered to place at the disposal of the committee their large hall and other rooms, and had written to say they would be pleased to help forward the meetings and make them a success. The lecture room of the Museum and the Blind Asylum Hall would be required, and thus they would be fixed up with halls within a reasonable distance of each other, so that members could easily go from one to the other.

Mr. A. P. I. Cotterell moved that a local general committee be formed to make the necessary arrangements in connexion with the Congress, the committee to consist of those who formed the Invitation Committee, together with those whose names had been read out that day, with power to add to their number.

Mr. J. Baker seconded the resolution, which was carried unanimously.

Mr. Boyd moved—"That a fund be raised for the purposes of meeting all local expenses."

Mr. Levy Langfield seconded, and the resolution was carried.

The High Sheriff moved the appointment of Dr. Colston Wintle as Chairman of the General Committee.

Mr. D. Irvine seconded the resolution, and it was carried.

The appointment of Hon. Treasurer was left to the committee, and, on the motion of Dr. Wintle, seconded by Mr. Moxey, the position of Hon. Secretary was conferred upon Mr. T. J. Moss Flower.

Dr. Shingleton Smith proposed the appointment of an Executive Committee, with power to add to their number, and this was seconded by the Rev. W. B. Cooper, and agreed to.

METROPOLITAN ASYLUMS BOARD.

THE usual fortnightly meeting of the Managers of the Metropolitan Asylums District was held on Saturday last week, at the offices of the Board, Victoria Embankment, W.C.

Leavesden Asylum.—The Asylums Committee submitted a report regarding a letter, received by the managers some two months ago from the Local Government Board, respecting a proposal to construct iron bridges between certain of the blocks of this Asylum, in the course of which letter the Local Government Board pointed out the costly character of the proposal. In their report the Committee stated that the estimated cost was 5,000*l.*, and, as showing the necessity for the proposed bridges, quoted some observations of the Commissioners in Lunacy. It was agreed to send a copy of the Committee's report to the Local Government Board.

Northern Hospital.—A report was submitted by the Hospitals Committee respecting the sewage disinfecting chamber at this hospital. There is at present a formal agreement between the Managers and the Southgate authorities, by which the Managers bind themselves to disinfect all the hospital sewage by an admixture of chemicals before it is passed into the local Board's sewers. On account of the cost, and for certain other reasons set forth by the Committee, they recommended that application should be made to the Southgate Local authority to terminate the agreement and to connect the drain direct to the public sewer. This was agreed to.

Stables at Belmont.—The Works Committee reported having received plans prepared by Messrs. T. W. Aldwinckle & Son, in consultation with Professor Sims Woodhead, and Dr. Cartwright Wood, for the stables and other buildings proposed to be erected at Belmont in connexion with the preparation of anti-toxin serum. On the recommendation of the Committee the plans were approved, and it was directed that they should be forwarded to the Local Government Board for sanction. The buildings are estimated to cost 4,600*l.*

Among the motions down on the agenda was the following, moved by the Chairman of the Board:—

"That no plan be submitted to the Board or to any Committee for approval unless and until the same shall have been deposited for the inspection of the Managers or members of the Committee concerned, in some convenient part of the Office of the Board at least two full days before the meeting at which it is proposed that such plan shall be submitted; and that on the agenda paper for any such meeting shall appear a notice stating what plan or plans have been so deposited, and in what room.

This was agreed to unanimously, the Chairman remarking that he thought the arrangement would work very satisfactorily.

DISTRICT SURVEYORS' ASSOCIATION.—The election of officers for 1906 has resulted as follows: Mr. Edward Dru Drury, President; Mr. Frederick Wallen, Vice-President; Mr. John Clarkson, Hon. Treasurer; Mr. Henry Lovegrove, Hon. Secretary. The retiring President, Mr. Thomas H. Watson, has given careful attention to his duties during a very busy year, and his unvarying courtesy increased, if possible, the esteem in which he is held by the London District Surveyors.

YORK MASTER BUILDERS' ASSOCIATION.

The York Master Builders' and Contractors' Association and friends assembled in the Old George Hotel, Pavement, York, on the 30th ult., under the chairmanship of Mr. Geo. Sharp, President of the Association, on the occasion of the annual dinner. The loyal toast having been honoured, Mr. F. Raney proposed the toast of "The Yorkshire Federation of Building Trades." He said that one of the objects of the federation was stated to be the promotion of equitable dealings with architects and others in relation to quantities and contract agreements. Speaking as regarded architects, he felt he might say without fear of contradiction that the great majority of architects were fully in accord with the federation on this subject. As regarded quantities and contract agreements, the society with which he was identified had lately given a considerable amount of consideration to this question, and more especially to the conditions of contract which had been adopted by the Royal Institute of British Architects, and the National Federation of Master Builders. Whilst they agreed *in toto* to the principles laid down in that document, there was some slight difference of opinion as to the most suitable form which could be adopted for local requirements. Some of them felt that the agreements were drafted to meet the requirements of a section of the building traders who did not probably carry on their business on methods the same as was done in that locality. Locally, he and his colleagues would like to see a revision of that so as to have the conditions more adapted to local use, and he thought there should be a conference between them and representatives of the Association of Master Builders. One of the things that architects were agreed upon was that the clause for quantity should be part of the contract. If it was not out of place he would like to express the wish that all representatives of the building trades could be drawn into an association of that kind. Another object which the federation had in view was the promotion of boards of conciliation on disputes between employer and employees. That he considered a most laudable object.—Mr. P. Rhodes, in acknowledging, said he ventured to assert that anyone who looked through the agreement between the National Association of Master Builders and the Royal Institute of British Architects with reference to architects' agreements calmly and judiciously would see that it was a most equitable arrangement as between architect and builder and between the builder and his employer. In the old days the builders did not appreciate the importance of their position. "We want to remember that next to agriculture we are the largest, oldest industry in this country, and when you come to consider that 50,000,000*l.* of money is paid annually in wages to employees of the building trades you should feel proud to belong to a craft which is of the highest and of the utmost importance." They should not worry their minds about reducing men's wages. Let the men have a fair, good wage, and let the masters themselves become powerful enough to demand a good day's work for it. They had the right to demand a good profit. During the last two or three decades the men had banded themselves into influential and powerful bodies, having a great influence in members and money. A number of years ago the masters had no federated feeling with masters in other towns, and the consequence was that when they came into contact with the men in a trade dispute they found that they had to fight not the local organisation of the men, but the whole national body. And so the Yorkshire Federation was formed, and as it grew it was connected with the North of England Federation, which was associated with the National Federation. As to the result of that alliance what better evidence was there than the institution of the conciliation rules, which were an accomplished fact?—Mr. A. W. Sinclair submitted the toast of "Success to the York Association," and said that during the last five years they had had no disputes of any moment, and the reason was that builders had become strong and powerful. There were something like 3,600 builders in the Northern Counties Federation, and when occasion arose and the cause was a just one they acted in concert for their own rights.—The Chairman, in responding, said their Association would in four months' time have been formed sixteen years. During their career they had had five strikes and only one serious lock-out.—Mr. R. Dent proposed "The Town and Trade of York," and said there were few towns which could boast of such treasures as they in York had—the walls, its bars, and the Minster—and the citizens ought to be proud of these treasures. He paid a tribute to the Dean and Chapter for the way in which they kept the Minster in repair, and hoped the walls and bars and the Minster would be kept in good repair to last another thousand years. He regretted that trade was not better in York than it was, and that the Ouse was not made more use of.—Councillor Mansfield, in acknowledging, said he believed that in 1885 or 1886, as far as the building trade was concerned, there were more men out of work in York proportionately than there were in the

city to-day. Mr. W. E. Biscomb proposed "The Architects and Surveyors," and Mr. E. T. Felgate and Mr. S. Needham briefly responded, expressing themselves in sympathy with the aims of the Federation. Mr. J. W. Biscomb gave the toast of "The Visitors," and Mr. Goodwill replied.

OBITUARY.

MR. J. P. SEDDON.—We regret to announce the death at St. Thomas's Nursing Home on February 1, after an operation, of Mr. John Pollard Seddon, aged seventy-eight years, of No. 62, Albany-mansions, Albert Bridge, S.W. Mr. Seddon was elected an Associate in 1852, and in 1860 a Fellow, of the Royal Institute of British Architects; he served as member of Council, and some thirty to forty years ago he acted for a period of ten years as Honorary Secretary of the Institute, in conjunction with the late C. Forster Hayward. In 1847 he was elected one of the original members of the Architectural Association; he acted as Honorary Secretary of the Association in 1850-51, and was reinstated in membership on November 6, 1903. He attended the Jubilee Banquet of the Association in 1897. Mr. Seddon was partner of the former firms of Messrs. Prichard & Seddon, of Llandaff, and Messrs. Seddon & Carter, of Cardiff. He was born on September 19, 1827, at London House, Aldersgate, where his father Thomas Seddon, whose biography he wrote, carried on business as a cabinet-maker. Having received his earlier education at Bedford Grammar School he was articled, 1848-51, to Professor Donaldson. He then, on returning from a professional tour upon the Continent, settled in practice in London. Having been appointed architect of an hotel at Southerndown, in Glamorganshire, he made acquaintance with the late John Prichard, who was then the cathedral and diocesan architect for Llandaff, with whom he entered into partnership at Llandaff in 1852, and whom he succeeded as diocesan and cathedral architect. The partnership lasted during ten years, Mr. Seddon taking London offices at No. 6, Whitehall, and Mr. Prichard practising at Llandaff. On the dissolution of the partnership Mr. Seddon married and took up his residence and offices at No. 12, Park-street (since No. 1, Queen Anne's-gate), Westminster, and there he continued to live until 1888. Messrs. Prichard & Seddon won a premium of 200*l.* with their designs, after the Gothic style, for the proposed War Office, 1857; their premiated designs, and their unpremiated designs for the proposed Foreign Office with Secretary of State's official residence are illustrated in the *Builder* of August 22, 1857. In the course of their extensive practice the firm were employed as architects for the restoration of Llandaff Cathedral and for a great number of churches, parsonage-houses, schools, and other public and private buildings in the southern counties of Wales and in Monmouthshire. They were the architects of Christchurch College, Brecon; Eatington Park, near Shipston-on-Stour, Warwickshire, for Mr. E. P. Shirley; and the enlargement of Beckford Hall, near Tewkesbury. Leaving for the moment the work carried out by Messrs. Seddon & Carter, we may mention the following as being amongst Mr. Seddon's more important architectural works, denoting with an *asterisk* those of which plans and illustrations have been published in the *Builder*:—Lambeth Palace Chapel; the bishop's and chapter choir stalls, Rochester Cathedral; restoration and stall-work, St. Nicholas parish church, Yarmouth; the churches of St. James, Yarmouth; St. Barnabas, Swindon, to which he added the north aisle eight years ago; St. James, Redruth; Hoarwithy, Herefordshire (July 5, 1884*), with the prayer-desk, and (1904) designs for the five stained-glass windows in memory of the late Rev. W. Poole, vicar; designs for a People's Palace on the Savoy site, Victoria-embankment, in conjunction with the late E. W. Godwin, to whom the river-side façade was due (February 12, 1887*); design for a proposed Ecclesiastical Art Exhibition building on the Savoy site, where is now the Medical Examination Hall, he having been appointed architect to the projectors of the undertaking (August 21, 1880*); the parish church of St. Paul, Hammersmith, 1882-89, in conjunction with Mr. H. Roumieu Gough (December 2, 1882, with interior view, elevations, sections, etc.*); a design for decorating the dome of St. Paul's Cathedral, based upon Sandro Botticelli's painting in the National Gallery, and elaborated and drawn by Mr. H. G. Murray, artist at Messrs. Belham's, of No. 155, Buckingham Palace-road, S.W. (January 31, 1885*); his suggested arrangement upon the Commutation-row site, Liverpool, of the Cathedral of Notre Dame, Paris, as tentatively restored with its spires by Viollet-le-Duc, with an article by Mr. Seddon upon the site and building (February 14, 1885, a drawing by the late H. W. Brewer*); competitive design for the Baptist Memorial Church, Paisley (August 8, 1885, interior view*); the D. G. Rossetti memorial fountain, Cheyne-walk, Chelsea, the bust by F. Madox Brown (April 17, 1886*); Christchurch Vicarage, Westminster (November 17, 1888*); the Dean Goulbourn testimonial pulpit in the choir of Norwich Cathedral (September 5, 1891*); the Canon Edwards, of Llandaff, memorial gateway, St. David's Welsh Church, Paddington (October 29, 1904*); the restoration of the upper portion of the tower of the XIIth century church of All Saints, Chalgrave, Bedfordshire (July 8, 1905*); country seats at Abermaide, Co. Merioneth, Rosdohan, Co. Kerry, Oxted, Surrey, Roughwood, Chalfont St. Giles, Bucks., with many others; the North and South Wales branch bank, Birkenhead; St. Peter's Orphanage and Sanitarium, Isle of Thanet, for the late Archbishop and Mrs. Tait; churches at Llanbadarn, near Aberystwith; Adforton, near Ludlow; Chigwell Row, Essex; Ayott (St. Peter's), Herts.; Ullenhall, near Henley-in-Arden; and Llandogo, Red-Brook, and Wyesham, Co. Monmouth; St. John's, Lacey Green, Wycombe; Holy Trinity, Fishponds, Stapleton, Gloucestershire; the restoration of many churches, comprising those of Convil, near Carmarthen; Camrose, Co. Pembroke; St. Nicholas, Great Kimble, Bucks.; St. Mary, Barfreyston, and SS. Peter and Paul, Eythorn, near Dover, Kent; St. Peter, Isle of Thanet; St. Leonard, Sunningwell, near Abingdon; St. Mary, Uphaven, Wilts.; St. Mary, Arminghall, near Norwich; and Holy Trinity, Ingham, near Stalham, East Norfolk. The Dean and Chapter engaged Mr. Seddon to report upon the condition of the west front of Norwich Cathedral, and fifteen years ago instructed him to advise them upon the general arrangements of the interior of the cathedral. Mr. Seddon was the architect of University College of Wales at Aberystwith (first built as a hotel), and on July 29, 1886, after the fire, was appointed architect for the rebuilding on the old site, as in his report, at a cost of 17,500*l.* In conjunction with Mr. Murray he prepared the scheme for the decoration, after the Italian Renaissance manner, for a bay on the north side of Christ Church, Bristol (1905); he superintended the execution (1893) of the W. H. Smith memorial window, St. Margaret's, Westminster, of which the cartoons were drawn by Mr. Murray from Miss Maud Seddon's studies for the figures, and, for Sir Edward and Lady Hall, of the Crucifixion window in the Taormina convent, Sicily; he prepared the designs for the organ screen, executed in teak, Llandaff Cathedral, 1903, for a new church at Walton-le-Dale, Lancashire, and the restoration, at a computed cost of from 8,000*l.* to 9,000*l.*, of St. Leonard's Church, near Preston, 1902-3. Mr. Seddon presented to Llandaff Cathedral five years ago the two side-light windows of the triplet in the west front, which he had designed, being memorials to the late Dean Williams and the late Jonas Watson, of Llandaff, respectively. In our number of March 26, 1904, we illustrated, with a four-page drawing, and plan, and with Mr. E. B. Lamb's drawing of the building as from near the end of Westminster bridge, the design prepared jointly by Mr. Seddon and Mr. Edward B. Lamb for a suggested Imperial Monumental Hall at Westminster for the Heroes of the Empire. Mr. Seddon was one of the twelve architects who were nominated to compete for the Royal Courts of Justice, for which he produced a very remarkable and original design. Mr. Seddon was awarded the bronze medal for Architecture, Paris International Exhibition, 1878; and made the designs for and superintended the execution of a large number of stained-glass windows, carried out by Messrs. Belham, of Pimlico. He was the author of "Memoirs and Letters of the late Thomas Seddon, Artist," 1859; "Progress in Art and Architecture," 1852, illustrated with his own lithograph drawings; "Rambles in the Rhine Provinces," 1868; "King René's Honeymoon Cabinet," 1898, a book describing and illustrating a cabinet which he originally designed for his professional drawings, 1862, and of which Sir E. Burne-Jones, D. G. Rossetti, and Madox Brown painted the panels in oil with a series called "King René's Honeymoon"†; and of "A Casket of Jewels," 1902, a work descriptive of the contents of the Royal Architectural Museum in Tufton-street, S.W. In July, 1900, Mr. Seddon was elected a Vice-President and member of Council, and in June, 1901, was re-elected a Vice-President of the Museum and the Westminster School of Art, to which he made a liberal donation. On December 19, 1902, silver bowls were presented to him and Mr. Maurice B. Adams in recognition of their services to the Museum during a period of twenty-five years and as honorary secretaries at the time of the transfer of the museum and school in 1902-3 to the Architectural Association. In November, 1901, Mr. Seddon was elected a member of the Committee of the Church Crafts League; his paper upon "Church Fittings," read to the Institute, is reported in our columns of April 19, 1890. He was one of the many honorary consulting architects to the Incorporated Society for Promoting the Enlargement, Building, and Reparation of Churches and Chapels; in April, 1904, he retired from the appointment of Surveyor for the Archdeaconry of Monmouth. Twenty-one years ago Mr. Seddon took as his partner Mr. John Coates Carter, of Cardiff, for, we understand, architectural work in South Wales, Monmouthshire, and the neighbouring districts; the partnership was dissolved on April 12, 1904. Messrs. Seddon & Carter, of Cardiff, were employed for the reparation and restoration of Chepstow Priory Church, of which they practically rebuilt the greater portion of the fabric, 1890; the firm prepared the plans and designs of new churches at Grangetown, in Windsor-road, and at Adamsdown (All Saints), with schoolroom underneath, 1902, in Cardiff; the Mission Room, Blaina, Mon., 1902; a new church, the Conservative Club (May 16, 1885*), and the enlargement of the Albert-road Board Schools, Penarth; some houses at Penarth and Dinas Powis; improvements and additions, Marine Hotel, Southerndown, 1899; and in 1903 the restoration, with addition of a north aisle, vestry, etc., of the interesting parish church of Rogiet, Monmouthshire. In conjunction with Messrs. James & Morgan, of Cardiff, they were architects of St. Dingat Church, New Tredegar, the designs being by Mr. Carter, 1893. In the *Builder* of March 20, 1886, we illustrated Messrs. Seddon & Carter's competitive designs, being one of the three sets jointly submitted by them for the Birmingham Assize Courts. At the funeral service on the 5th inst. the Architectural Association was represented by Mr. G. H. Fellowes Prynne and Mr. D. G. Driver, the Secretary.

† At the close of the Exhibition, 1862, the South Kensington Museum authorities applied to purchase that work. Mr. Seddon, however, retained it, and in 1897 presented it as a wedding gift to his daughter, Mrs. Birch.

MR. INGLEBY WOOD.—We regret to record the death, in Edinburgh, on the 30th ult., of Mr. Lindsay Ingleby Wood at the early age of thirty-three. Mr. Wood was an architect by profession, but he was perhaps better known to the public on account of his researches in the fields of art and matters of antiquarian interest. Mr. Ingleby Wood was one of the best-known and recognised authorities upon old pewter, and recently published a book of much historical and literary value dealing with the old Scottish pewter industry under the title of "Scottish Pewter Ware and Pewterers." He was a frequent contributor to *The Connoisseur* and other art journals upon old pewter and kindred subjects. One who knew him writes—"He was an artist of no mean order and his work in black and white had a striking individuality, as was shown in his sketches of 'Vanishing Edinburgh and Leith.'"

MR. WILLIAM VAUGHAN.—The death occurred on the 29th ult. at the age of fifty-five years, of Mr. William Vaughan, of Lilycroft-road, Bradford, the Architect to the Bradford Education Authority, after an illness extending over several months. The eldest son of the late Rev. William Vaughan, he was articled with Mr. Samuel Jackson. Afterwards he was for ten years in the office of Messrs. Milnes & France, and in 1882 he was appointed assistant architect in the Borough Surveyor's department of the Corporation, a position he held for over nineteen years. In September, 1901, he was appointed architect to the Bradford School Board, and had held the same position since the institution of the Education Authority.

MR. HANNEN.—The death, on January 29, is announced of Mr. Benjamin Hannen, of No. 4, Pembridge-place, Bayswater, and Ouseleys, Wargrave, Berks., aged seventy-six years. Mr. Hannen was a brother of the late Lord Hannen, President of the Probate, Divorce, and Admiralty Division, High Court of Justice. In 1858 Mr. Hannen joined the firm of Messrs. Holland & Hannen, builders and contractors, then of No. 17, Duke-street, Bloomsbury, and Belvedere-road, Lambeth, in whose offices he had previously served during a term of ten years. In 1883 the firm acquired the business of Messrs. Wm. Cubitt & Co., of Gray's Inn-road and Cubitt Town, Poplar, nearly all the partners of that firm having then retired, and Mr. Hannen eventually became the principal of the firm in Gray's Inn-road. At the time of the first great strike in the building trade he was member of the Council of Builders, and on the second occasion was Chairman of the Builders' Committee.

GENERAL BUILDING NEWS.

CHURCH, SWANSEA.—The Bishop of St. David's recently consecrated the new church of St. Michael and All Angels, at Manselton. Mr. Bruce Vaughan is the architect. The portion of the church already completed has cost 5,000*l.*

SCHOOLS, MISSION-GROVE, WALTHAMSTOW.—These schools, which were opened on the 3rd inst., consist of a two-floor block accommodating 400 infants on the ground floor and 400 girls on the first floor, on the 9 and 10 square feet basis respectively. The site has an area of 2,900 sq. yds. and is 300 ft. long by a breadth of 87 ft. The infants' school has a central hall, 68 ft. 9 in. by 27 ft. 9 in., and the hall of the upper floor 63 ft. 10 in. by 28 ft. 6 in. Each department has eight classrooms accommodating fifty each, which are lighted from the left hand. Owing to the narrowness of the site six of the classrooms in each department are in line and over each

other at the back, and one at each end of the halls. The building is faced with "Redbank" red-pressed bricks, gauged arches and aprons, with Portland stone dressings. The front elevation is treated plainly in a free Renaissance character; the floors and staircases are of fireproof construction; those of classrooms, halls, and teachers' rooms are laid with pitch-pine blocks, the galleries in classrooms being formed to a slope of 1 in 10. All rooms have separate inlets and outlets for ventilation, with ridge ventilators on roof, and the heating, which is on the low-pressure system, was provided by Messrs. Boyd & Sons. The lighting throughout is by electricity. The out-offices (with separate trapped pans) and playsheds are at the west end of playgrounds. The latter will eventually be tar-paved. The contract amounted to 9,965*l.*, and has been carried out by Messrs. Rowley Bros., of Tottenham, from plans prepared by Mr. H. Prosser, Architect to the Education Committee.

PARISH HALL, ELTHAM.—The new parish hall, which has been erected in connexion with the Holy Trinity Church at New Eltham, was opened on the 1st inst. It will accommodate about 400 people and has been built from plans by Mr. Whistler.

ASSEMBLY HALL AND LIBRARY, ILKLEY.—The foundation-stones have just been laid of this building, which is being erected from the designs of Mr. William Bakewell, of Leeds, which designs were selected in competition. The total estimated cost, exclusive of furnishing, is 13,000*l.*

HALL, OSWESTRY.—The new Memorial Hall, erected at Oswestry, has just been opened. The building will be used by the local friendly and trades' societies as a club-house, etc., and also by a ladies' committee as a restaurant for the use of people attending the Oswestry Smithfield. The building is situated at the corner of Smithfield-street and Smithfield-road. On the ground floor is a restaurant, 40 ft. by 18 ft., with cloak rooms, etc., adjoining. The main hall measures 40 ft. by 27 ft. On the second floor there are four club-rooms. The architect was Mr. Frank B. Smith, and the contractors were Messrs. Jones & Evans, of Oswestry.

NEW NORTH RIDING COUNCIL BUILDINGS, NORTHALLERTON.—We gave a brief description of these buildings last week, but we omitted to state that the asphalting of the flat roofs was carried out by Claridge's Patent Asphalte Company, Ltd., of Victoria Embankment, W.C.

APPOINTMENT.

SWAFFHAM RURAL DISTRICT COUNCIL.—Mr. W. V. Thwaites has been elected, out of 127 candidates, as Surveyor to the Swaffham Rural District Council.

SANITARY AND ENGINEERING NEWS.

DRAINAGE BY-LAWS.—On Monday the Public Health Committee of Paddington Borough Council reported having asked the London County Council to define by-law No. 5 of their code, relating to intercepting traps, so as to make it clear that a manhole is to be provided in connexion with every intercepting trap. In reply, a letter had been received to the effect that the suggestion had been noted for consideration when any general amendment of the by-laws under section 202 of the Metropolis Management Act, 1855, was contemplated.

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.—Messrs. Marshall & Bradley, architects, have removed their offices from 31, Old Queen-street, Westminster, to Parliament Mansions, Victoria-street, S.W.——Mr. W. A. Scott, architect, has removed his offices from 74, Holly-bank-square to 45, Mountjoy-square, Drumcondra, Dublin.

MANCHESTER INFIRMARY.—At the meeting of the Board of Management of the Manchester Royal Infirmary on the 29th ult. it was stated that, with the exception of the out-patients' block, the whole of the ground floors of the new infirmary buildings at Stanley-grove are practically completed. The granite basis is also finished around the nurses' home, and the builders are waiting for the stone to carry it round the administrative and teaching blocks. The contracts for the erection of the three-story buildings fronting Oxford-street will be let in April next.

THE LATE ASSISTANT LIBRARIAN AT THE INSTITUTE.—Mr. Lawrence I. Gomme, assistant librarian at the Library of the Royal Institute of British Architects, has recently resigned his position in order to take up new work in Montreal. All architects who have been in the habit of frequenting the Library during the past five or six years will miss Mr. Gomme, for he made a friend of everyone with whom he came into touch, and his ready sympathy and interest were always at the command of those who sought them. His genuine desire to assist all who wished to use intelligently the splendid resources of the Library, added to his own considerable knowledge, won him immediate confidence, and he has been of great service to students and others who were seeking information. Mr. Gomme sailed for Canada on the 25th of last month, and will, therefore, by this time have reached his destination, where we may be sure he will meet with deserved recognition and ultimate success.

GLASGOW UNIVERSITY.—The Senate will confer the honorary degree of Doctor of Laws upon Sir James Guthrie, President of the Royal Scottish Academy, and upon M. Auguste Rodin, President of the International Society of Painters, Sculptors, and Gravers, at the graduation ceremony on April 17 next.

THE TEACHING OF MATHEMATICS TO TECHNICAL STUDENTS.—A meeting of the Association of Teachers in Technical Institutes will be held at the Regent-street Polytechnic, London, on Saturday evening, February 17, commencing at 7.30 p.m., when the following papers will be read and discussed:—(1) "The Teaching of Mathematics to Engineering Students," by Mr. G. E. St. L. Carson (Head of the Mathematical Department, Battersea Polytechnic); (2) "The Teaching of Mathematics to Building Trade Students," by Mr. Harold Bustridge (Lecturer on Building Construction, etc., London County Council Paddington Technical Institute). All teachers and others interested in mathematical teaching are cordially invited to attend and take part in the discussions.

THE BUILDERS' EXCHANGE, BIRMINGHAM.—On Thursday, the 1st inst., a large audience attended the first of the series of lectures being given at the Builders' Exchange, Birmingham. Mr. W. Sapcote, President of the Advisory Council, took the chair at 6 p.m. The lecturer, Mr. H. Browning Button, took for his subject "The Underground Slate Quarries of North Wales." The lecture was illustrated by lantern slides which showed the enormous difficulties to be surmounted in obtaining slates for building purposes. Among others were slides showing the workings, milling operations, and means of transit, together with illustrations of the methods employed for examining the roofs of the huge chambers from which the slate has been extracted. The lecturer claimed for Welsh slates their absolute superiority on geological grounds; the Welsh slate veins being in a strata of rock of considerably greater age than those of France and America. The slates from neighbouring quarries used in roofing houses in Blaenau-Festiniog 80 to 100 years ago were as good as the day they were put on. The shipment of Welsh slates from Portmadoc averages 115,000 to 120,000 tons per annum. Statistics were quoted showing the development of imports in foreign slates. The lecturer stated these were unfit for use in districts where the atmosphere is charged with chemical fumes, and buildings on which they had been used had had to be re-roofed with Welsh slates. The Chairman suggested that, in addition to the lecture, it would be of great interest if it could be arranged for a visit to be made to the slate quarries, and preparations are now being made to give effect to this suggestion.

SCULPTURE.—Before the members of the Bradford Philosophical Society at the Bradford Church Institute on the 1st inst., Mr. M. H. Spielmann lectured on "British Sculpture of To-day." Sculpture, the lecturer said, should primarily represent ideas, and not things. The public welcomed anything pictorial, and it was not strange that so subtle an art as sculpture was little understood in this country. Almost anyone could mould clay into the resemblance of a man, but in true sculpture the model had to be idealised or the result must be commonplace. Chief amongst the characteristics of the modern school was the effort towards such realism as did not detract from the dignity of conception. Until Alfred Stevens no one thought of instilling life and blood into clay and marble. He infused into his work not only life but dignity of form and movement. The lecturer proceeded to outline the chief characteristics of the work of the leading sculptors of the modern English school. The lecture was illustrated by lantern slides.

BRISTOL MASTER BUILDERS' ASSOCIATION.—The annual general meeting of this Association was held at the offices, Guildhall, Small-street, Bristol, when the chair was occupied by the President, Mr. E. I. Neale. The annual report was presented and adopted, as also were the audited accounts, presented by the hon. treasurer. The annual report for the year 1905 stated that:—Not for many years past has the building trade of this city been under such a cloud of depression as during 1905. . . . Your committee, however, trust that the downward tendency has reached its lowest ebb. In fact, there is every indication to lead them to believe that in the near future trade will open up, and the work of the builder will be in request. . . . Much time and attention have been devoted to the charges made by the Bristol Water Works Company to builders for water used in constructional operations. The terms and conditions obtaining in many industrial centres were procured and tabulated, from which it appeared that the charges in Bristol were unfavourable. The directors were urged to receive a deputation from the Association, but they did not see their way to acquiesce. Accordingly, representations were made to the Board through their secretary, and much correspondence took place, your committee strongly urging their claims for more liberal treatment. . . . Your committee granted interviews to deputations from the Masons' Society, Carpenters' Society, and the Bricklayers' Society, when very friendly discussions took place in respect to matters arising particularly out of the working rules. The societies promised to submit their cases in writing; however, only the carpenters carried out their promise, and they wrote to the effect that at the present time members of the Masters' Association were somewhat guided by the clauses which were inserted by the architects, to the effect that "certain firms shall do particular work." What their Society required was that such clauses should be deleted by the architects from their specifications, and that the whole of the work in connexion with the preparing and laying of wood block floors should be done by the builders, and that it should be considered the same as any other work, which belonged to the trade of a carpenter and joiner. The question was very fully considered, when it was resolved:—"That the members of this Association will use their best enedavours to comply with the request of the United Trade Council of Carpenters and joiners in securing the work of laying wood block floors for local men. Further, that a copy of the letter received from the Society, together with this Association's reply, be forwarded to the Architects' Society." . . . For some time past your committee have considered that some alterations were necessary in the winter working hours, as set forth in the existing working rules. After very mature deliberation it was decided to give notice to the various operative societies, in December last, viz.:—(1) It is proposed to substitute the following in place of rule 1, sections A and B: That from the third Monday in October to the third Saturday in March the working hours for the first five days of the week shall be from 8 a.m. until 12 noon, and from 1 p.m. until 5 a.m., and on Saturdays from 8 a.m. to 1 p.m., with the exception of the month of December, when work shall cease at 4.30 p.m. on the first five days of the week; that the working hours for the remainder of the year be as at present; (2) It is proposed to amend rule 10 to read as follows: That any alteration of these rules shall require six months' notice from either side, such notice to expire on the first day of January in each year. During the year many questions have arisen in relation to forms of contract and tender. Without exception your committee have advised their members to adhere strictly to the rules of the Association, and it is with satisfaction they record their appreciation of the unanimity with which their recommendations have been adopted from time to time. . . . The report also referred to the death of Mr. John Bastow, Mr. A. E. Denby and Mr. W. Podger and Mr. H. J. Spear, their late secretary. The Chamber of Commerce having organised a testimonial fund in recognition of the services rendered by the late Mr. Spear to the trade and commerce of the city generally, the Association actively supported the scheme, and were the means of raising a sum of 159*l.* 7*s.* 6*d.*, which sum has been handed to the trustees for investment. The President moved the following resolution: "That Mr. R. F. Ridd be elected President of the Association for the current year." This was seconded by Mr. E. Walters, supported by Mr. George Humphreys, and carried by acclamation. Mr. Ridd suitably acknowledged his election. Mr. R. F. Ridd moved, Mr. Geo. Humphreys seconded, and it was resolved unanimously, "That the best thanks of the Association be conveyed to Mr. E. I. Neale for the large amount of time and attention he has devoted to its work, and for the able manner in which he has conducted the affairs of the Association." Mr Neale returned thanks for the vote. Mr. R. F. Wilkins was elected as Vice-President of the Association, upon the motion of Mr. R. F. Ridd, seconded by Mr. George Downs. It was resolved upon the proposition of Mr. Neale, seconded by Mr. Downs, "That Mr. Geo. Humphreys be re-elected hon. treasurer of the Association for the coming year, and that the best thanks of the Association be tendered Mr. Humphreys for his past services." Upon a ballot, Messrs. E. I. Neale, Frank N. Cowlin, W. Foster, E. Walters, A. Dowling, J. Lovell, F. Chown, and E. A. Love were elected members of the committee for the ensuing year.

Legal.

THE WIDENING OF PICCADILLY:

IMPORTANT DECISION.

IN the Chancery Division on the 7th inst. Mr. Justice Buckley gave judgment in the cases of J. L. Denman & Co., Ltd. *v.* the Mayor, Aldermen, and Councillors of the City of Westminster, and J. C. Cording & Co. *v.* the same defendants.

In these cases the plaintiffs claimed injunctions to restrain the defendants from proceeding upon notices to treat whereby plaintiffs were required to treat for the sale to the defendants of certain hereditaments adjoining Piccadilly for the

purposes of widening Piccadilly, and, if necessary, a declaration that the adjudication of the Council of the defendants referred to in such notices was *ultra vires* on the ground that only a small portion of the land and premises comprised in the notices was required for such widening.

The facts of the case sufficiently appear from the following judgment.

His lordship said that on the north side of Piccadilly a short distance west of the Circus was a block of land bounded by Piccadilly, Air-street, Regent-street, and Piccadilly-place. The freehold was in the Crown. The plaintiffs in the first action, Denman & Co., Ltd., were the Crown lessees of Denman House, being Nos. 19 and 20, Piccadilly, which stood at the south-east corner of the block, with a frontage of 44 ft. and a depth of about 57 ft. to Air-street. Denman House was an important building erected by the plaintiffs two or three years ago under a building agreement with the Crown at a cost of 25,000*l*. Their lease was dated November 9, 1903, the rent 950*l*. per annum, and the term extended to October 10, 1982. These plaintiffs occupied the shop in the western half of the house and some other parts of the premises. The plaintiffs in the second action, J. C. Cording & Co., were the under-lessees of Denman & Co., and occupied the shop in the eastern part of the house and also some portion of the basement and the whole of the mezzanine floor. They paid a rent of 1,200*l*. per annum, their tenure was thirty-nine years from October 10, 1903, as to one part of the premises, and as to the other twenty-one years from October 10, 1903. Both plaintiffs had carried on business on the site for many years, the first plaintiffs for more than fifty years and the other plaintiffs for more than thirty years. The premises were very important to them, the site being one of the best in London, and the London County Council and the defendants had in contemplation a public improvement, viz., the widening of Piccadilly by throwing into the street a strip of land which at the eastern end of Denman House would be about 27 ft. wide, and which might not be more than 25 ft. There was no question that the defendants were entitled to use their powers under Michael Angelo Taylor's Act as, and for the purpose of, acquiring such land necessary for that purpose. On June 10, 1905, the defendants served on Denman & Co., and on June 26 on the other plaintiffs, notices to treat for the whole of their interests in Denman House. The question in the case was whether these notices to treat were valid. The St. James's Hall and Restaurant occupied a large part of the block of land in question. The Piccadilly Hotel Company were desirous of erecting on the plot of land a large hotel, and they held an agreement from the Crown for a lease of the whole block subject to Denman & Co.'s existing lease. The Hotel Company were desirous of obtaining possession of Denman House, pulling it down, and extending their hotel over so much of the site as was not thrown into the widening of Piccadilly. The plaintiffs, on the other hand, were desirous of retaining so much of the property as was not required for the widening of the street.

His lordship then went through the agreements entered into between the Crown, the London County Council, and the Hotel Syndicate, dated respectively October 26, 1903, and March 4, 1904, and said that the Syndicate had acquired the ground leases of a large part of the premises upon the block which they contracted to surrender to the Crown. The Crown was not a party to any arrangement by which any part of Denman's property was to be acquired otherwise than by agreement, except so far as it was to be acquired for the purpose of the strip. As between the County Council, the defendants, and the Hotel Company the contractural rights were determined by three agreements dated respectively June 1, 1904, July 11, 1904, and June 6, 1905. His lordship said he thought these agreements intended a contract by the local authority, that they would, at the request of the Syndicate, use their statutory authority for the purpose of acquiring other and additional land for the purpose of throwing it into that which, under the bargain with the Syndicate, was to be subject to a new Crown lease in their favour for the purposes of the hotel. On April 6, 1905, the Westminster City Council passed the resolution in exactly the form submitted by the London County Council. In his opinion they passed it because they had contracted to pass it. He found no evidence that they exercised any independent judgment of their own in the matter. The local authority had no right to seek to reduce the expense to the rate-payers by straining their powers in the interest of persons who desired to acquire the adjacent land from those who were the owners of it. He went on to consider whether upon the facts of the case the house was such as that the defendants, who unquestionably were entitled to take part of it, were entitled to take the whole. He came to the conclusion that upon the 30 ft. of depth which was not wanted for the widening there was no difficulty in preserving with a certain amount of re-construction so much of the building as stood on that 30 ft. Upon the facts of the case he arrived at the conclusion that the local authority were not entitled to take more than was wanted for the widening of the street, and that the 30 ft. depth which would remain after the widening, was not wanted, but was a building which could be and ought to be left as a house which the plaintiffs as the owners desired to retain and from which the defendants had no right to dispossess them for the purpose of putting the hotel company into possession. He thought that the plaintiffs were entitled to injunctions restraining the defendants from proceeding upon the notices to treat, and the defendants must pay the costs of the actions.

ACTION BY A QUANTITY SURVEYOR FOR FEES.

MR. JUSTICE SUTTON, in the King's Bench Division, on the 2nd inst., delivered a considered judgment in the case of Elsmore *v.* Vallerie, an action by the plaintiff, a quantity surveyor, to recover from the defendant, Mr. Ernest Vallerie, of Westcliffe-on-Sea, Essex, 1,164*l*., charges for preparing bills of quantities for the proposed building of a hotel pursuant to the instructions of Mr. W. L. Griffiths, an architect, being 1½ per cent. on the estimated cost of the building.

The defence set up was that Mr. Griffiths had no authority to pledge the defendant's credit in the matter. The defendant further said that he, Mr. Griffiths, and a solicitor named Goldring, were joint speculators who were to promote a company to carry out the erection of the proposed hotel and that they were not to receive any fees unless the promotion was successful, and as the promotion has not been successful the fees were not payable. The facts sufficiently appear from the following judgment.

His lordship said the plaintiff brought the action to recover a large sum for preparing bills of quantities on the instructions of Mr. Griffiths, an architect, for a proposed hotel at Westcliffe which was never built. The action was brought against the defendant, and as against him the plaintiff must fail unless he could show that he (defendant) authorised Mr. Griffiths to give the plaintiff the instructions he did. What were the facts as given to his lordship? Mr. Griffiths said that the defendant instructed him to prepare plans and specifications for the hotel, and particularly that he was to get out bills of quantities. Plaintiff knew there was a scheme with regard to the hotel, but Mr. Griffiths said it was an independent scheme. Mr. Goldring, a solicitor, was called, and he said the scheme was a joint speculation. Then he had the evidence of the defendant, who said he never employed Mr. Griffiths as architect and never gave him any instructions as to the preparation of the bills of quantities. But his lordship had to look at other facts in the case. Defendant, in the contract for the purchase of the necessary land, appeared as the purchaser, but he did not find any part of the money, and as nominee his name appeared on the prospectus of the proposed company which was going to work the hotel. But the prospectus was never issued. Therefore the conclusion he came to was that the defendant was the mere nominee in the matter and selected for that purpose on account of his knowledge in the management of hotels. Mr. Goldring was a partner in the scheme, and he was to give his services gratuitously unless the scheme proved a success. Mr. Goldring said that the defendant was to take the contracts in his own name as nominal owner. Mr. Griffiths, he said, was to prepare the plans and specifications of what was necessary and was not to look for payment unless the scheme succeeded. Under the scheme Mr. Griffiths was to have 5 per cent. on the contract price if it succeeded, and that would have amounted to a very large sum. Viewing all the circumstances of the case and the evidence given, his lordship came to the conclusion that the scheme was a speculation only on the part of the three gentlemen, viz., the defendant, Mr. Griffiths, and Mr. Goldring. To his mind that was clearly shown to him to be the case. He thought there must be judgment for the defendant with costs.

Order accordingly.

Mr. Pyke Glasgow appeared for the plaintiff, and Mr. C. A. Russell, K.C., and Mr. Chester Jones for the defendant.

ACTION ON AN OAK FLOORING CONTRACT.

MR. JUSTICE KENNEDY, sitting in the Commercial Court last week, concluded the hearing of the case of Johnson & Son *v.* The Ritter Lumber Company, an action by the plaintiffs to recover from the defendants damages for alleged breach of contract and alternatively for breach of warranty.

It appeared that in September, 1905, plaintiffs required a large quantity of oak flooring, and it was said that defendants agreed to supply them with 90,000 superficial feet of prime clear white oak flooring carefully grooved and tongued, etc., at 21s. 9d. per square, c.i.f. London, the lengths to be 6 ft. to 16 ft., with not over 20 per cent. of the lengths under 8 ft. finished. The plaintiffs said that in May and June, 1905, they paid to the defendants in respect of oak flooring 994*l*. 13s. 11d., but that when it was delivered it was totally unfit for the purposes for which it was required, the boards being twisted, warped, split, and sappy, 30,531 of the boards were red instead of white oak, and 24,229 pieces were shorter than the minimum length of 6 ft.

Mr. Montague Shearman, K.C., and Mr. Eustace Hills appeared for the plaintiffs, and Mr. Pickford, K.C., and Mr. Cautley for the defendants.

Mr. Hills said that the main points of the plaintiffs' contention were that the lengths were far shorter than the contract arranged for, and that the wood was knotty, sappy, and of the wrong colour and twisted. Every care was taken of the parcels delivered, a special building being erected to receive and store them. The timber was tested by laying down a sample floor, which proved its unsuitability. On that the plaintiffs decided they could not use it, and they had to buy other timber, for which they paid 31s. 6d. per square as against 21s. 9d., the contract price. That amounted to 618*l*. 5s., and for cartage and other expenses 180*l*. 12s. 10d., a claim for 798*l*. 17s. 10d., in addition to the payment of the wood rejected.

Mr. J. F. Johnson gave evidence as to inspecting the first consignment. He said it was very knotty and twisted and in quite a green state. About 50 per cent. of it was red instead of white oak. He laid a sample floor with the wood and it was found to be unsuitable.

Mr. Wm. Douglas Carõe, Architect to the Ecclesiastical Commissioners, gave evidence that he condemned the wood as unsuitable.

Mr. E. F. Whitford, timber measurer, said he had examined and measured the consignment in question. Out of 491 squares 244 were white and 247 red oak. He found 12,420 pieces under 6 ft. in length, or 25½ per cent., and 23,215 pieces under 8 ft., or 47½ per cent.

This being the plaintiff's case,

Mr. H. Brown, general manager of the defendant company, gave evidence to the effect that he inspected the goods in question on their arrival in the Victoria Dock and was satisfied with the delivery. He afterwards saw the boards stored in a building in course of construction, and in a room where plastering and the mixing of mortar was going on, places damp and quite unfit to store it in. He did not think there was an unusual number of short pieces, and said it was an advantage to have a selection of shorts in laying flooring. He thought after a careful tally that there was about 11½ per cent. of red oak in the parcel.

Other evidence was given that the wood was of good quality, but was inadequately protected from wet and not properly piled.

In the result his lordship, in giving judgment, said he felt sure from the evidence that a cargo which ought never to have been tendered was tendered. Part of it was red oak, it was not of prime quality, and it fell short of the specification in many respects. Something like half of it was red oak and not white oak, and there were short lengths, though that was one of the least important points of the claim. He was also quite clear that a good deal was very badly prepared, badly sawn, and not joined and grooved. He did not fix the damages on the basis claimed by the plaintiffs, but on a basis of 6s. per square, which worked out at 270*l*., for which amount he gave judgment for the plaintiffs with costs.

Order accordingly.

ACTION AGAINST A BUILDER.

MR. JUSTICE FARWELL, sitting as an additional judge of the King's Bench Division, on the 7th inst., heard the case of Pennington *v.* Drake, an action by the plaintiff, an estate agent, of Richmond, against Mr. C. A. Drake, a builder and contractor, of Teddington, claiming commission on 7,800*l*., being the purchase money of twelve houses on the Udney Park Estate, Teddington.

Mr. Heber Hart appeared for the plaintiff; and Mr. Dickens, K.C., and Mr. Mears for the defendant.

The plaintiff's case was that he entered into a bargain with the defendant to introduce a purchaser for the twelve houses, and that he did so, but it turned out that there was something wrong with the title, and the purchase was not completed. It was contended on behalf of the plaintiff that if a sale did not come off through a defect in the title, which the owner did not disclose to the agent at the time of his employment, the right of the agent to his commission was not affected thereby.

On behalf of the defendant it was submitted that, in trying to extract from a series of letters a contract, plaintiff could not stop at a particular point and say "there is a contract final and conclusive," but the correspondence must be looked at as a whole, and it would be found that a condition was brought into the discussion upon which, whatever the terms a preceding agreement might be, there was no ultimate agreement. It was said that the defendant employed the plaintiff to procure a purchaser who was ready and willing to enter into a contract to buy on such terms as the defendant was prepared to sell, and commission was to be payable in the event of such a sale. But the defendant and the

would-be purchaser were never at one, and plaintiff could only recover if it were shown that he procured a purchaser and bound that purchaser so that in the event of an action against that purchaser the vendor would have succeeded.

His lordship, in giving judgment, said the real stumbling-block was a question not of a restricted covenant, but of a mortgage. He found as a fact that the plaintiff never did procure anybody who was willing to enter into such a contract as a purchaser. He gave judgment for the defendant, with costs.

ACTION BY THE UNITED BUILDERS' LABOURERS' UNION.

THE case of the United Builders' Labourers' Union *v.* Stevenson came before Mr. Justice Farwell sitting as an additional judge of the King's Bench Division on the 6th inst.

Mr. Disturnal appeared for the plaintiffs; and the defendant in person.

Mr. Disturnal, in opening the case, said that the defendant up to October, 1904, was General Secretary of the plaintiff Union, and the action was brought to recover from him 577*l.* odd. The various branches of the Union collected money from their members, some of which was utilised for expenses and the remainder was sent to the General Secretary in London for the general funds of the Union. The accounts were put by the defendant into the annual report, and the complaint was that in 1901, 1902, and 1903 there were certain items entered in these accounts by which the funds in the hands of the Union were depleted. In October, 1904, there was some dissatisfaction among the members as to the previous year's accounts, and the defendant was suspended and ultimately prosecuted by the Union for falsifying the accounts in respect of those very items and the defendant was convicted last year at the South London Sessions and sentenced to a term of imprisonment. The amount involved was the sum claimed in the action.

Evidence having been given in support of the plaintiff's case,

The defendant addressed his lordship. He said that had he been guilty of the charge made against him he would not have contested the action. For some time past he had been obliged, owing to the refusal of the members of the Union to allow him proper assistance, to keep the books in a manner unsatisfactory to him. When the question in the case arose, he demanded a committee of inspection and these men had deserted him like rats leaving a sinking ship and made a scapegoat of him. He was one of the founders of the Union and had had no training in book-keeping. He had to deal with people who would vote 50*l.* regardless of where the money was to come from. Then the men whom he trusted to go through the accounts and deal with him honestly had entered the office and in contravention of the rules had removed the receipts, showing how the money had been expended, to a coffee-house in Charlotte-street, Blackfriars, where they were left "kicking about" for days, and many of them lost. He was thus prevented from proving his innocence, for whatever mistakes were made in the balance-sheet not one penny piece of the money had gone into his pocket. Had he been able to prevent the destruction of the receipts he could have proved that every penny was accounted for. Those receipts meant to him honour and life. At any time he could have gone away with 1,000*l.* of the Union's money instead of which he courted an inquiry. He was convicted and had to endure the sufferings of a guiltless man for mistakes for which he was not responsible. Besides being a member of two boards, he was a prospective candidate for Parliament, which honour he would have had if it had not been for this case. The defendant concluded by swearing earnestly and emphatically that he had never had one penny of the money for his own use. He said he was a penniless man and would not have fought the claim had not his honour been involved.

His lordship, in giving judgment, said he was not trying a charge of criminality. It was obvious from the defendant's own accounts that there was no answer to the claim and there must be judgment for the plaintiffs for the amount claimed with costs.

Order accordingly.

THE LONDON BUILDING ACT.

AT Lambeth Police Court recently, Mr. W. Goddard, a builder, of Elfindale-road, Herne Hill, was summoned for failing to comply with a notice of irregularity served upon him under the provisions of the London Building Act.

Mr. W. C. Williams, who supported the summons, said it was issued at the instance of Mr. Ellis Marsland, the District Surveyor, under sect. 61, sub-sect. 2 of the London Building Act of 1894, which provided that wholly or in part as a dwelling-house there should be provided proper means of access to the roof. The summons had reference to a row of eight houses at Herne Hill, erected by the defendant, none of which were provided with proper means of access to the roof. A notice of irregularity was served upon the defendant. Nothing had been done in regard to seven of the houses, and with respect to the other the District Surveyor was not satisfied with what had been done.

The defendant's building manager answered the summons, and contended that inasmuch as the defendant's interest in the property had lapsed an order could not be made against him.

Mr. Baggallay, however, ordered the defendant to comply with the requirements of the District Surveyor within twenty-eight days.

PATENTS OF THE WEEK.

APPLICATIONS PUBLISHED.*

1,105 of 1905.—A. SAYERS: *Kitchen Ranges.*

This relates to a kitchen range comprising in combination a fire grate provided with movable fire bars which can be raised or lowered as desired, means arranged below the grate for regulating the admission of air thereto, and a deep boiler which is arranged in a downwardly projecting flue in such manner that the hot gases first pass down in front of the boiler and then up at the back thereof.

29,651 of 1905.—G. C. MARKS (V. J. KERIHUEL): *Flying Bridges, Traversing Bridges, and the like.*

This invention relates to flying bridges, traversing bridges, and the like, the object being to adapt a flying bridge or traversing bridge so that at certain intervals it may be used for continuous traffic. This is accomplished by providing, in addition to the traversing car, two platforms or large cars arranged to be moved away from each other when the bridge is used for its normal purpose, but towards each other at other times so as to provide, in conjunction with the traversing car, a continuous track for pedestrian, ordinary vehicular, or railway traffic to the purpose required.

7,247 of 1905.—C. A. JONES: *Folding Framework Suitable for Tents or Screens, with or without Roofs, or for other such purposes.*

This relates to folding framework suitable for tents or screens, with or without roofs, or for other purposes, and consists in the use of supports which connect the horizontal rails at three points, and thus control the entire action automatically and symmetrically in all positions.

7,471 of 1905.—A. G. GRICE: *Cranes of Tubular Construction or otherwise.*

This relates to cranes of tubular construction, and consists in the arrangement of parts whereby the axes of the jib barrel and of the heaving barrel are in line with the axis of the jib—that is to say, with the plane in which the jib can vibrate.

18,730 of 1905.—J. NISBET: *Supports for Concrete or Composite Blocks for Fireproof Floors, Ceilings, Columns, Walls, or Foundations.*

This relates to supports for concrete or composite blocks of fire-proof floors, ceilings, columns, walls, or foundations, said supports being composed of lengths of light metal corrugated and grouped together.

22,797 of 1905.—BAKER & CROCKETT, LTD., AND E. BENNETT: *Stock or Plate Locks, in Part Applicable also to other Locks.*

This relates to a stock or plate lock, and consists of a plate which carries the mechanism and is let into a cavity, preferably circular in shape, formed in from the back of the stock and surrounded by the material of the stock, the said plate being bedded against the back of the cavity.

23,516 of 1905.—D. DOYEN: *Suspension Support for Sliding Gates, Doors, or the like.*

This relates to a suspension support for sliding gates, and consists in supporting the gate by its upper part by means of a horizontal bar upon which there slides a tube provided at each end with a stuffing box upon which the gate or door operates, this arrangement enabling a person to obtain a sliding guide for the motion longer than the width of the door or gate and in suspending the same upon stuffing boxes in which can be placed materials of any kind, which facilitates the guide sliding softly and without noise and which do not require attention.

23,808 of 1905.—J. SWARTZ: *Apparatus for Automatic Closing of Doors and the like.*

This relates to an apparatus for automatic closing doors and the like, and consists in the combination of one or more springs between the door and the door post, friction blocks secured to the door and the door post, and hook-shaped projections on the said friction blocks.

21,095 of 1905.—H. AERI: *Method for the Production of Hollow Poles of Concrete with a Metal Insertion forming an Inter-connected Framework for Electric Conductors and the like.*

This relates to a method for the production of hollow poles of concrete with a metal insertion forming an inter-connected framework for electric conductors and the like, and consists in placing the metal framework, with a suitable interval, on a conical core, and pressing same together with the core into a horizontal jacket forming a semi-cone of the same length as the pole, and containing concrete mortar, thereupon applying concrete mortar also to the metal framework of the upper frame half, striking off said mortar with the aid of templates and striking board according to the outer shape of the pole, and, after setting of the mortar, finally withdrawing the cores.

5,516 of 1905.—J. G. MCPHAIL, M. A. MCPHAIL, AND R. SHEANE: *Fire Grates.*

This relates to a rotatable grate, and consists in the combination with a cage rotatably mounted in standards and provided with a door for the introduction of the fuel, and means for securing the said door, of a handle attached to said standards whereby the grate may be transported by hand.

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

PUBLISHER'S NOTICES.

Nat. Tel., 6112, Gerrard. Telegrams, "The Builder, London."

THE INDEX (with TITLE-PAGE) for VOLUME LXXXIX. (July to December, 1905) was given as a supplement with the issue of January 13th.

CLOTH CASES for Binding the Numbers are now ready, price 2s. 6d. each: also

READING CASES (Cloth), with Strings, price 9d. each.

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Advertisements for the current week's issue are received up to THREE o'clock p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after HALF-PAST ONE p.m. on that day. Those intended for the Outside Wrapper should be in by TWELVE NOON on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, etc., left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

ADVERTISERS in "THE BUILDER" may have *Replies addressed to the Office*, Catherine Street, Covent Garden, W.C., *free of charge*. Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage. Unused stamps are returned to advertisers the week after publication.

N.B.—The Reply Boxes are not intended for trade lists, circulars, and the like; should these be received, they cannot (if noticed) be forwarded.

AN EDITION Printed on THIN PAPER, for FOREIGN and COLONIAL CIRCULATION, is issued every week.

READING CASES { NINEPENCE EACH. By post (carefully packed) 1s.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

January 26.—By G. H. MASTERMAN & CO. (at Sunbury).

Charlton, Middx.—"Hurst Farm," 10 a. 3 r. 19 p., *l.* and c.	£1,200
Charlton-rd., two freehold villas, p.	500
Charlton-rd., twelve cottages, *l.*, w.r. 113*l.* 2s.	925
Shepperton Green, Middx.—Four freehold cottages, w.r. 42*l.* 18s.	320

January 29.—By P. & G. GREEN.

Lambeth.—61 to 74, Commercial-rd., u.t. 3 yrs., g.r. 30*l.*, w.r. 592*l.* 10s.	440

By HOLCOMBE, BETTS, & WEST.

Hackney.—Wayland-av., f.g. rents 74*l.*, reversion in 56½ yrs.	1,910

By KEMSLEYS'.

Norwood.—Macclesfield-rd., "Beech," "May," "Oak," and "Alma" villas, u.t. 98½ yrs., g.r. 16*l.* 16s., w.r. 114*l.* 8s.	650

By F. VARLEY & SON.

Holloway.—42, Grove-rd. (s.), u.t. 43 yrs., g.r. 8*l.*, y.r. 48*l.*	350
Tottenham.—23, Langham-rd., u.t. 71 yrs., g.r. 6*l.* 10s., e.r. 34*l.*	255

January 30.—By J. BARTON & CO.

Belvedere, Kent.—1 to 14, William-st., u.t. 53 yrs. and 63 yrs., g.r. 70*l.*, w.r. 248*l.* 3s.	705

By BROWETT & TAYLOR.

Bloomsbury.—2, Endsleigh-st., u.t. 16½ yrs., g.r. 30*l.*, y.r. 110*l.*	540
Lewisham.—High-st., "The Priory," area 14,100 ft., *l.*, p.	1,630

By F. WARMAN.

Holloway.—30, Pemberton-gdns., u.t. 45 yrs., g.r. 10*l.*, e.r. 60*l.*	500
Canonbury.—75, Marquess-rd., u.t. 40 yrs., g.r. 10*l.*, e.r. 55*l.*	450
Stroud Green.—226, Stapleton Hall-rd., u.t. 85 yrs., g.r. 12*l.*, p.	775

By NOYS & HOWES.

Sydenham.—Taylor's-la., freehold stabling and coach-house. p. £205

By RUTLEY, SON, & VINE.

Islington.—61, 63, and 65, Prebend-st., u.t. 21 yrs., g.r. 18*l.* 18s., y.r. 110*l.* 620
Camden Town.—1, 2, and 3, Pleasant-row, f., w.r. 130*l.* 1,080
4 and 5, Pleasant-row, u.t. 32 yrs., g.r. 15*l.*, w.r. 54*l.* 12s. 160
Walthamstow.—159, High-st. (s.), f., y.r. 50*l.*... 1,000

January 31.—By MARK LIELL & SON.

Mile End.—44 St. Peter's-rd., u.t. 24½ yrs., g.r. 3*l.* 8s., y.r. 32*l.* 240
Bow.—24, Mostyn-rd. (s.), u.t. 30½ yrs., g.r. 5*l.*, y.r. 32*l.* 250
153, Tredegar-rd. (s.), u.t. 59½ yrs., g.r. 7*l.*, y.r. 60*l.* 790

By VENTOM, BULL, & COOPER.

Hackney.—108, Pritchard's-rd. (s.), f., y.r. 65*l.* 480

By C. P. WHITELEY.

Mitcham, Surrey.—Upper Green, freehold shop and premises, y.r. 40*l.* 1,120

By DOUGLAS YOUNG & CO.

Kensington.—22, Milson-rd. (s.), u.t. 70 yrs., g.r. 10*l.*, y.r. 55*l.* 620
South Lambeth-rd.—No. 282, f., e.r. 38*l.* 510
Dalston.—49, Lansdowne-rd., u.t. 38 yrs., g.r. 4*l.* 10s., e.r. 35*l.* 280

February 1.—By HEAPS, SON, & REEVE.

Limehouse.—163 and 165, Salmon-la. (s.), f., w.r. 54*l.* 12s. 505
218, Rhodeswell-rd., f., w.r. 31*l.* 4s. 265
West Ham.—Albert-rd., f.g. rents 6*l.*, reversion in 54 yrs. 160

February 2.—By WALTER HALL.

Hampstead.—1 to 4, Parliament Hill-rd., f., e.r. 270*l.* 2,100
Hornsey.—Falkland-rd., f.g. rents 39*l.*, reversion in 89 yrs. 1,015
Greenwich.—Foyle-rd., a free building plot.... 135

By PERCIVAL HODSON.

Elmers End.—53 to 61 (odd), Croydon-rd., f., w.r. 104*l.* 1,115
1 to 15 (odd), Eden-rd., f., w.r. 123*l.* 10s..... 1,060
17 and 19, Eden-rd., f., w.r. 37*l.* 14s..... 440
New Southgate.—Beaconsfield-rd., "Crofton Lodge," u.t. 73½ yrs., g.r. 10*l.* 10s., y.r. 30*l.* 230
2 to 7, 12 to 21, Bawtry-rd., u.t. 73 yrs., g.r. 72*l.*, w.r. 351*l.* 1,525

By MERVIN & ADAMS.

Clapton.—12, Beecholme-rd., u.t. 64½ yrs., g.r. 6*l.* 6s., w.r. 41*l.* 12s. 200

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

MEETINGS.

FRIDAY, FEBRUARY 9.

Royal Institution.—Mr. H. F. Newall, M.A., F.R.S., on "Eclipse Problems and Observations." 9 p.m.

Architectural Association.—Rev. G. H. West, A.R.I.B.A., on "Differences between English and French Gothic Art." 7.30 p.m.

Institution of Civil Engineers (Students' Meeting).—Mr. R. H. Mackie on "Electric Driving at the Locomotive-works of the North London Railway." 8 p.m.

SATURDAY, FEBRUARY 10.

Junior Institution of Engineers.—Twenty-second Anniversary Dinner at the Hotel Cecil, 6.30 for 7 p.m. The President, Mr. Dugald Clerk, M.Inst.C.E., F.C.S., in the Chair.

Architectural Association.—Second spring visit, to Messrs. Waring & Gillow's new premises, Oxford-street, 2 p.m.

MONDAY, FEBRUARY 12.

Surveyors' Institution.—Discussion on Mr. Marshall's paper on "The Valuation of Machinery for Rating Purposes." 8 p.m.

Institution of Mechanical Engineers (Graduates' Lecture).—Professor W. Cawthorne Unwin, F.R.S., on "The Niagara Power-Stations." 8 p.m.

TUESDAY, FEBRUARY 13.

Institute of Sanitary Engineers (Students' Lecture).—Mr. F. Aldous on "Ventilation of Buildings." 7 p.m.

WEDNESDAY, FEBRUARY 14.

Architectural Association Discussion Section.—Mr. Stanley Hamp on "Modern Hotels and Restaurants." 7.30 p.m.

Royal Sanitary Institute.—A discussion, "Is the Intercepting-Trap a Failure?" to be opened by Mr. R. Read, City Surveyor, Gloucester, and Dr. W. Butler. 8 p.m.

Society of Arts.—Mr. Claude Johnson on "The Horseless Carriage," 1885-1905. 8 p.m.

Association of Engineers-in-Charge.—Mr. H. C. H. Shenton on "Small Water Supplies." Mr. J. Patten Barber, M.Inst.C.E. (President), will preside. 8 p.m.

Northern Architectural Association.—Mr. J. B. Mitchell-Withers on "Early XVIIIth Century Architecture," with lantern illustrations. 7.30 p.m.

Edinburgh Architectural Association.—Baillie W. Fraser Dobie on "The Æsthetic Duty of a Corporation to a City." 8 p.m.

THURSDAY, FEBRUARY 15.

Junior Institution of Engineers.—Mr. H. Heathcote Statham on "Architectural Design and Expression." 8 p.m.

The London Master Builders' Association.—Dinner at the Whitehall Rooms, Hôtel Metropole, Charing Cross. 6.30 p.m.

Carpenters' Company, London Wall (Lectures on Matters Connected with Building).—The Rev. W. Marshall, M.A., F.S.A., on "Some Points of Architectural Interest in our Parish Churches." 8 p.m.

Builders' Exchange, Birmingham (Exchange Hall).—Mr. F. G. Whittall on "The Housing Problem," illustrated by lantern slides. 6 p.m.

Society of Arts (Indian Section).—Mr. R. B. Buckley on "The Navigable Waterways of India." 4.30 p.m.

FRIDAY, FEBRUARY 16.

Royal Institution.—Mr. W. C. Dampier Whetham, M.A., on "The Passage of Electricity through Liquids." 9 p.m.

Institution of Mechanical Engineers.—Fifty-ninth Annual General Meeting, when the annual report of the Council will be presented, and the results of the ballot for the annual election of the President, Vice-Presidents, and Members of Council will be announced. A paper on the following subject will be read and discussed: "Large Locomotive Boilers," by Mr. G. J. Churchward. 8 p.m.

SATURDAY, FEBRUARY 17.

Royal Institution.—Mr. M. H. Spielmann, F.S.A., on "George Frederick Watts, as a Portrait Painter," I. 3 p.m.

TERMS OF SUBSCRIPTION.

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PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Hard Stocks	1 7 0	per 1000 alongside, in river.
Rough Stocks and Grizzles	1 4 0	" " "
Facing Stocks	1 16 0	" " "
Shippers	2 0 0	" " "
Flettons	1 5 6	" at railway depôt.
Red Wire Cuts	1 11 0	" " "
Best Fareham Red	3 12 0	" " "
Best Red Pressed Ruabon Facing..	5 0 0	" " "
Best Blue Pressed Staffordshire	4 1 0	" " "
Do. Bullnose	4 6 6	" " "
Best Stourbridge Fire Bricks	3 15 6	" " "
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	12 0 0	" " "
Headers	11 0 0	" " "
Quoins, Bullnose, and Flats	16 0 0	" " "
Double Stretchers	19 0 0	" " "
Double Headers	16 0 0	" " "
One Side and two Ends	19 0 0	" " "
Two Sides and one End	20 0 0	" " "
Splays, Chamferred, Squints..	20 0 0	" " "
Best Dipped Salt Glazed Stretchers, and Header	12 0 0	" " "
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Double Stretchers	15 0 0	" " "
Double Headers	14 0 0	" " "
One Side and two Ends	15 0 0	" " "
Two Sides and one End	15 0 0	" " "
Splays, Chamferred, Squints..	14 0 0	" " "
Second Quality White and Dipped Salt Glazed	2 0 0	" less than best.

	s. d.	
Thames and Pit Sand	6 9	per yard, delivered.
Thames Ballast	5 3	" "
Best Portland Cement	26 0	per ton, "
Best Ground Blue Lias Lime	19 0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 0d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1 8½	" "
PORTLAND STONE (20 ft. average)—		
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 1	" "
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 2½	" "

	s. d.	
Ancaster in blocks	1 10	per ft. cube, deld. rly. depôt.
Beer "	1 6	" "
Greenshill "	1 10	" "
Darley Dale in blocks	2 4	" "
Red Corsehill "	2 2	" "
Closeburn Red Freestone	2 0	" "
Red Mansfield "	2 4	" "
YORK STONE—*Robin Hood Quality.*		
Scappled random blocks.	2 10	" "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super., "
6 in. rubbed two sides ditto, ditto	2 6	" "
3 in. sawn two sides slabs (random sizes)	0 11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	" "
1½ in. to 2 in. ditto, ditto	0 6	" "

STONE (*continued*).

	s. d.	
HARD YORK—		
Scappled random blocks.	3 0	per ft. cube, deld. rly. depôt.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 8	per ft. super., "
6 in. rubbed two sides ditto	3 0	" "
3 in. sawn two sides slabs (random sizes)	1 2	" "
2 in. self-faced random flags	0 5	" "

	s. d.	
Hopton Wood (Hard Bed) in blocks	2 0	per ft. cube, deld. rly. depôt.
" " " 6 in. sawn both sides landings	2 7	per ft. super. deld. rly. depôt.
" " " 3 in. sawn both sides random slabs	1 0	" "
" " " 2 in. do.	0 8½	" "

SLATES.

In. In.	£ s. d.	
20×10 best blue Bangor	13 2 6	per 1000 of 1200 at r. d.
20×12 " "	13 17 6	" "
20×10 first quality "	13 0 0	" "
20×12 " "	13 15 0	" "
16×8 " "	7 5 0	" "
20×10 best blue Portmadoc	12 12 6	" "
16×8 " "	6 12 6	" "
20×10 best Eureka unfading green	15 17 6	" "
20×12 " "	18 7 6	" "
18×10 " "	13 5 0	" "
16×8 " "	10 5 0	" "
20×10 permanent green	11 12 6	" "
18×10 " "	9 12 6	" "
16×8 " "	6 12 6	" "

TILES

	s. d.	
Best plain red roofing tiles	42 0	per 1000 at rly. depôt.
Hip and Valley tiles	3 7	per doz. "
Best Broseley tiles	50 0	per 1000 "
Do. Ornamental tiles	52 6	" "
Hip and Valley tiles	4 0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards)	57 6	per 1000 "
Do. Ornamental do.	60 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51 9	per 1000 "
Do. Ornamental do.	54 6	" "
Hip tiles	4 1	per doz. "
Valley tiles	3 8	" "
Best "Rosemary" brand plain tiles	48 0	per 1000 "
Best Ornamental tiles	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 8	" "
Best "Hartshill" brand plain tiles, sand-faced	50 0	per 1000 "
Do. pressed	47 6	" "
Do. Ornamental do.	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "

WOOD.

BUILDING WOOD.	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	13 10 0	... 15 0 0
Deals: best 3 by 9	13 0 0	... 14 0 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 0 0	... 12 0 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best.
Battens: seconds	0 10 0	" "
2 in. by 4 in. and 2 in. by 6 in.	9 0 0	... 10 0 0
2 in. by 4½ in. and 2 in. by 5 in.	8 10 0	... 9 10 0
Foreign Sawn Boards—		
1 in. and 1½ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	"
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 4 10 0	... 5 0 0
Seconds	4 0 0	... 4 10 0
Small timber (8 in. to 10 in.)	3 12 6	... 3 15 0
Small timber (6 in. to 8 in.)	3 0 0	... 3 10 0
Swedish balks	2 10 0	... 3 0 0
Pitch-pine timber (30 ft. average)	3 5 0	... 3 15 0

JOINERS' WOOD.		
White Sea: first yellow deals, 3 in. by 11 in.	24 0 0	... 25 0 0
3 in. by 9 in.	22 0 0	... 23 0 0
Battens, 2½ in. and 3 in. by 7 in.	16 10 0	... 18 0 0
Second yellow deals, 3 in. by 11 in.	18 10 0	... 20 0 0
" 3 in. by 9 in.	17 10 0	... 19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	... 14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	13 10 0	... 15 0 0
Battens, 2½ in. and 3 in. by 7 in.	11 0 0	... 12 0 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 0 0	... 22 10 0
Do. 3 in. by 9 in.	18 0 0	... 19 10 0
Battens	13 10 0	... 15 0 0
Second yellow deals, 3 in. by 11 in.	16 0 0	... 17 0 0
Do. 3 in. by 9 in.	14 10 0	... 16 0 0
Battens	11 0 0	... 12 10 0
Third yellow deals, 3 in. by 11 in.	13 0 0	... 14 0 0
Do. 3 in. by 9 in.	12 10 0	... 14 0 0
Battens	10 0 0	... 11 0 0
White Sea and Petersburg—		
First white deals, 3 in. by 11 in.	14 10 0	... 15 10 0
" " 3 in. by 9 in.	13 10 0	... 14 10 0
Battens	11 0 0	... 12 0 0
Second white deals, 3 in. by 11 in.	13 10 0	... 14 10 0
" " 3 in. by 9 in.	12 10 0	... 13 10 0
" " battens	10 0 0	... 11 0 0
Pitch-pine: deals	16 10 0	... 20 0 0
Under 2 in. thick extra	0 10 0	... 1 0 0

WOOD (continued).

JOINERS' WOOD (continued)—	At per standard. £ s. d.		£ s. d. upwards.
Yellow Pine—First, regular sizes	44 0 0		
Oddments	0 0		„
Seconds, regular sizes	33 0 0		„
Yellow Pine oddments	28 0 0		„
Kauri Pine—Planks, per ft. cube	0 3 6	...	0 5 0
Danzig and Stettin Oak Logs—			
Large, per ft. cube	0 3 0	...	0 3 6
Small „ „	0 2 6	...	0 2 9
Wainscot Oak Logs, per ft. cube	0 5 0	...	0 5 6
Dry Wainscot Oak, per ft. sup. as inch	0 0 8	...	0 0 9
¾ in. do. do	0 0 7	...	—
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 9	...	0 1 0
Selected, Figury, per ft. super. as inch	0 1 6	...	0 2 6
Dry Walnut, American, per ft. super. as inch	0 0 10	...	0 1 0
Teak, per load	17 0 0	...	22 0 0
American Whitewood Planks, per ft. cube	0 4 0	...	0 5 0
Prepared Flooring, etc.—	Per square.		
1 in. by 7 in. yellow, planed and shot	0 13 6	...	0 17 6
1 in. by 7 in. yellow, planed and matched	0 14 0	...	0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	...	1 0 0
1 in. by 7 in. white, planed and shot	0 12 0	...	0 14 6
1 in. by 7 in. white, planed and matched	0 12 6	...	0 15 0
1¼ in. by 7 in. white, planed and matched	0 15 0	...	0 16 6
¾ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0 11 0	...	0 13 6
1 in. by 7 in. „ „	0 14 0	...	0 18 0
¾ in. by 7 in. white „ „	0 10 0	...	0 11 6
1 in. by 7 in. „ „ „	0 12 9	...	0 15 0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.		£ s. d.
Rolled Steel Joists, ordinary sections	6 15 0	...	7 10 0
Compound Girders, ordinary sections	8 5 0	...	9 5 0
Steel Compound Stanchions	10 17 6	...	11 7 6
Angles, Tees, and Channels, ordinary sections	8 5 0	...	9 5 0
Flitch Plates	8 10 0	...	9 0 0
Cast Iron Columns and Stanchions including ordinary patterns	7 0 0	...	8 0 0

METALS.

	Per ton, in London. £ s. d.		£ s. d.
IRON—			
Common Bars	8 0 0	...	8 10 0
Staffordshire Crown Bars, good merchant quality	8 10 0	...	9 0 0
Staffordshire "Marked Bars"	10 0 0	...	—
Mild Steel Bars	8 15 0	...	9 0 0
Hoop Iron, basis price	9 5 0	...	9 10 0
„ „ Galvanised	17 0 0	...	—
("And upwards, according to size and gauge.)			
Sheet Iron Black—			
Ordinary sizes to 20 g.	9 10 0	...	—
„ „ 24 g.	10 10 0	...	—
„ „ 26 g.	12 0 0	...	—
Sheet Iron, Galvanised, flat, ordinary quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	14 0 0	...	—
Ordinary sizes to 22 g. and 24 g.	14 10 0	...	—
„ „ 26 g.	15 0 0	...	—
Sheet Iron, Galvanised, flat, best quality—			
Ordinary sizes to 20 g.	17 0 0	...	—
„ „ 22 g. and 24 g.	17 10 0	...	—
„ „ 26 g.	19 0 0	...	—
Galvanised Corrugated Sheets—			
Ordinary sizes 6 ft. to 8 ft. 20 g.	13 10 0	...	—
„ „ 22 g. and 24 g.	14 0 0	...	—
„ „ 26 g.	15 5 0	...	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	11 10 0	...	—
Best Soft Steel Sheets, 22 g. & 24 g.	12 10 0	...	—
„ „ 26 g.	14 15 0	...	—
Cut Nails, 3 in. to 6 in.	9 10 0	...	9 15 0

(Under 3 in., usual trade extras.)

LEAD, &c.

	Per ton, in London. £ s. d.		£ s. d.
LEAD—Sheet, English, 3lb. and up.	19 5 0	...	—
Pipe in coils	19 15 0	...	—
Soil pipe	22 5 0	...	—
Compo pipe	22 5 0	...	—
ZINC—Sheet—			
Vieille Montagne ton	33 10 0	...	—
Silesian	33 10 0	...	—
COPPER—			
Strong Sheet per lb.	0 1 0	...	—
Thin „	0 1 1	...	—
Copper nails „	0 0 11	...	—
BRASS—			
Strong Sheet „	0 0 11	...	—
Thin „	0 1 0	...	—
TIN—English Ingots „	0 1 8	...	—
SOLDER—Plumbers' „	0 0 8	...	—
Tinmen's „	0 0 10	...	—
Blowpipe „	0 0 11	...	—

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds	2¼d. per ft. delivered
„ fourths	1¾d. „ „
21 oz. thirds	3¼d. „ „
„ fourths	2¾d. „ „
26 oz. thirds	4d. „ „
„ fourths	3¼d. „ „
32 oz. thirds	5¼d. „ „
„ fourths	5d. „ „
Fluted Sheet, 15 oz.	3¼d. „ „
„ 21 oz.	4d. „ „
½ Hartley's Rolled Plate	2d. „ „
¾ „ „ „	2½d. „ „
Figured and Oxford Rolled	2¾d. „ „
Oceanic, etc. white	4d. „ „
„ „ „ tinted	5¼d. „ „

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 1 11
„ „ „ in barrels	„	0 2 0
„ „ „ in drums	„	0 2 2
Boiled „ „ in pipes	„	0 2 1
„ „ „ in barrels	„	0 2 2
„ „ „ in drums	„	0 2 4
Turpentine in barrels	„	0 4 0
„ in drums	„	0 4 2
Genuine Ground English White Lead	per ton	22 10 0
Red Lead, Dry	„	21 10 0
Best Linseed Oil Putty	per cwt.	0 6 6
Stockholm Tar	per barrel	1 13 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 0
Fine Elastic Carriage	0 12 6
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 0
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 6
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TO CORRESPONDENTS.

NOTE.—The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

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We are compelled to decline pointing out books and giving addresses.

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All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and not to the Editor.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

ACTON TURVILLE.—For erecting temporary stables at Badminton Hotel. Mr. F. W. Wills, architect, 8, St. Stephen-street, Bristol:—

S. Clibbens	£3,321 15 0	P. Chick	£1,125 0 0
J. Browning	1,400 0 0	E. Preece	1,117 0 0
J. Perkins & Son	1,400 0 0	W. Cowlin & Son	1,100 0 0
R. F. Ridd	1,329 0 0	A. E. Denby & Co.	1,098 0 0
Humphreys, Ltd.	1,314 0 0	H. W. & E. I. Neale	1,095 0 0
J. Hatherly	1,297 0 0	E. Walters & Son	1,024 0 0
W. J. Orchard	1,265 0 0	F. Smith & Co., Ltd.	1,020 0 0
M. Durnford	1,250 0 0	T. Pearce	969 5 6
E. Love	1,189 0 0	G. Brain	940 0 0
J. McManus	1,187 0 0	W. & A. Edgell	936 10 0
E. Clark & Son	1,185 0 0	C. Jennings & Co., Bristol*	875 0 0
T. Broad & Sons	1,160 0 0		
W. White	1,140 16 7		
F. Chown	1,136 0 0		

CASTLESIDE (Durham).—For erecting a villa, for Mr. J. A. Ripley. Mr. J. J. Eltringham, architect and surveyor, Derwent-street, Blackhill:—

T. Gallacher	£580	W. Ayton & Sons, Durham-road, Blackhill	£510
Eltringham, Ltd.	575		

CLACTON-ON-SEA.—For erecting shops and houses, Pier-avenue, for Mr. H. Bromley. Messrs. Baker & Wrightson, architects, Clacton-on-Sea, and 21, Liverpool-street, E.C.:—

J. Wright	£6,989	B. Burch	£6,238
R. N. Marrable	6,870	Scales & Robins	6,166
Potter & Son	6,800	H. J. Linzell	6,099
Dobson & Son	6,588	W. Chambers	5,989
C. Roper	6,500	H. Smith	5,967
Cubitt & Gotts	6,370	J. McKay, Clacton*	5,898
Everett & Son	6,270		

[Architects' estimate £6,166].

CLEY-NEXT-THE-SEA.—For alterations and additions to schools, for Norfolk Education Committee. Quantities by the Committee's Building Inspector:—

W. S. Larner, East Dereham £599 14 11

[Sixteen tenders were received.]

DORCHESTER.—For alterations to No. 40, South-street, for the Governors of the Grammar School. Mr. F. T. Maltby, C.E., architect and surveyor, Dorchester:—

C. E. Slade	£460 0	Watts Bros., Dorchester*	£406 17
J. Salby	420 0		
J. W. & H. Childs	414 5		

FALKIRK.—For the extension of the Post Office, for the Commissioners of H.M. Works and Public Buildings. Mr. W. T. Oldrieve, architect, Edinburgh:—

		Credit. Old materials.	
W. Allan & Cowan	£2,293 15 6	....	—
A. Cameron	2,054 14 9	....	—
W. Shaw & Son, Ltd	2,000 0 0	....	—
E. C. Morgan & Sons	1,915 0 0	....	—
Drummond & Crowe	1,880 0 0	....	—
G. & R. Cousin	1,849 4 6	....	—
Beattie & Sons	1,738 0 0	....	—
J. & C. Dewar	1,844 18 11	....	£108 10 8
W. McPherson	1,794 8 2	....	90 4 3
J. J. & P. Maclachlan	1,776 3 4	....	104 15 0
J. & A. Main*	1,640 0 0	....	—

GUILDFORD.—For boundary walling, etc., at the Workhouse, for the Guardians. Mr. E. L. Lunn, architect and surveyor, 36, High-street, Guildford:—

Rooke & Peppiatt	£617 3 0	Martin &	£410 13 6
A. Johnson	491 0 0	S. Ellis	404 0 0
Swayne & Son	429 0	R. Smith	396 0 0
Tribe & Robinson	424 0 0	Higlett & Hammond	378 0 0
A. & F. Ganmon	418 0 0	T. Pearce	374 0 0
Higgs & Outhwaite	417	E. C. Hughes, Wokingham*	355 15 6
S. Sayers	414 14		

GUILSBOROUGH.—For additions and alterations to a house, for Mr. C. Brown. Messrs. Brown & Mayor, architects and surveyors, 80, Abington-street, Northampton. Quantities by the architects:—

E. D. Sharman & Son	£1,330 0	F. Watson	£1,180 0
A. Martin	1,329 0	W. Beardsmore	1,170 0
W. Higgins	1,239 0	T. Higgs	1,150 0
S. Hardwick	1,233 15	W. Webster, Guilsborough, Northampton*	1,120 0
A. Clarke	1,199 0		
T. Millar	1,190 0		

HALSTEAD.—For alterations to the Corn Exchange, for Halstead Advisory Committee, Essex Education Committee. Mr. F. Whitmore, Architect:—

G. Grimwood & Son	£448 0	Suckling & Co., Halstead*	£355 0
G. Sharp	419 15		
W. Sudbury, sen.	405 10		

HARPFORD (Devonshire).—For erecting a house at Benchams, Harpford, near Newton Poppleford. Mr. J. Archibald Lucas, architect, Guildhall-chambers, Exeter:—

F. Jelley	£3,105	Ellis & Sons	£2,658
G. Herbert	3,087	Woodman & Son	2,625
Northcott	3,056	H. Gould	2,625
Westcott, Austin, & White	3,037	Granger	2,550
Tremlett	2,930	E. Mudge	2,454
Cooper	2,872	E. S. Setter, 46, Bath-road	2,325
Pettrich Bros.	2,855	A. Haymans, Exmouth*	2,290
G. Setter	2,814		
Pratt	2,749		

IPSWICH.—For erecting the Ranelagh-road Council School, for the Education Committee. Mr. J. A. Scheuermann, architect, 23, High-street, Ipswich:—

Oak Building Co., Ltd.	£13,280 9	S. A. Kenney	£11,839 0
Jenkins & Sons, Ltd.	12,964 0	V. A. Marriot	11,800 0
T. J. & A. Gower	12,570 0	C. Roper	11,760 0
J. C. Smith	12,345 0	G. Greenwood & Sons	11,491 0
F. C. Thurman	12,298 8	Spencer Santo & Co.	11,460 0
A. Sadler	12,200 0	C. A. Green	11,340 0
T. Parkington & Son	12,085 0	W. H. Death	11,255 0
M. Death	11,993 0	C. Borrett	11,240 0
H. J. Linzell	11,956 0	E. Catchpole & Sons, Ltd., Princes-street, Ipswich†	10,983 0
Kertadge & Shaw	11,881 0		
J. M. Kay	11,850 0		

KINSALE (Ireland).—For building a dwelling house, for Mr. D. O'Sullivan, M.B. Mr. M. A. Hennessy, architect, 74, South-mall, Cork:—

D. Murphy	£2,000	J. Jones	£1,700
J. Sisk	1,997	Kelly Bros., Kinsale*	1,663
D. Duggan	1,800		

MAIDSTONE.—For sewage disposal works, Allington and Aylesford, for the Corporation. Mr. G. R. Strachan, engineer, 9, Victoria-street, Westminster, London:—

John Mowlem & Co., Ltd.	£74,220 0 0
J. Dickson	61,699 3 0
Tilbury Contracting and Dredging Co., Ltd.	58,193 16 3
J. Riley	57,947 8 1
W. Moss & Sons, Ltd.	57,260 3 5
A. E. Nunn	57,031 3 9
F. W. Trimm	56,192 0 0
Kemp Bros.	55,751 8 9
Lock, Andrews, & Price	55,578 10 2
S. W. Harrison & Co.	69,936 0 0 / 53,593 0 0
R. C. Crawford	53,008 6 7
Johnson & Langley	52,092 1 8
J. & T. Binns	50,950 1 6
H. E. Buckley	50,744 10 10
Muirhead, Greig, & Matthews	49,829 9 6
E. & E. Iles	49,713 0 0
R. H. B. Neal, Ltd.	49,537 0 0
Smith & Co.	48,860 14 1½
Kellets, Ltd.	48,609 0 0
G. E. Wallis & Sons, Ltd.	48,400 0 0
D. T. Jackson	47,471 19 7
Davies, Ball, & Co.	47,363 0 0
J. Jackson	47,213 15 3
A. Braithwaite & Co.	46,577 18 8
J. Moran & Sons, Ltd.	45,709 17 0
J. W. Dean, Ltd.	45,212 14 2½
Underwood Bros.	44,310 18 9
F. Osenton	42,063 0 0
O. Wright & Co., S. Wigston, Leicester*	41,482 5 6

TENDERS—*Continued on page 157.*

List of Contracts, etc.

COMPETITIONS.

Nature of Work.	By whom Required.	Premiums.	Designs to be delivered
*DESIGNS FOR PUBLIC LIBRARY	Southwark B.C.	50*l.* 30*l.* and 20*l.*	April 2.
*DESIGNS FOR COLLEGE BUILDINGS	University College of N. Wales	Not stated	No date.

CONTRACTS.

(For some Contracts still open, but not included in this List, see previous issues.)

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, etc., supplied by	Tenders to be delivered
Additions to Corf House, Garmouth	.....	C. C. Doig, Architect, Elgin	Feb. 13
Infectious Diseases Hospital	Musselburgh Town Council ..	Burgh Surveyor, Musselburgh, N.B.	do.
Repairs to Schools	Leeds Education Committee	Architect's Department, Education Offices, Leeds	do.
3,000 gallons of Turpentine	Southern Mahratta Ry. Co. ..	E. Z. Thornton, Sec., 46, Queen Anne s Gate, S.W.	do.
39 tons Red and White Lead	do.	do.	do.
Private Street Works, Abercynon	Mountain Ash U.D.C.	Surveyor, Town Hall, Mountain Ash	do.
Scavenging, etc.	Blaby R.D.C.	B. A. Shires, Alliance-chambers, Leicester	do.
Stores	Dublin Corporation	Spencer Hartz, Borough Surveyor, City Hall, Dublin	Feb. 14
Four Labourers' Cottages	Rathdown No. II. R.D.C.	P. Cunniam, Clerk, Loughtinstown	do.
Alterations, etc., to Kitchen at Forest House Workhouse, N.E. ..	West Ham Guardians	Clerk's Office at Workhouse, James'-lane, Leytonstone, N.E.	do.
Stoneware Pipe Sewer, Oughtybridge	Wortley R.D.C.	G. E. Beaumont, Surveyor, Grenoside	do.
Road Material, Gorbals and Paisley Divisions	Renfrew County Council	W. H. Hill, 194, Ingram-street, Glasgow	do.
Whinstone, Slag, and Granite	Escrick R.D.C.	F. A. Camidge, 3, Stonegate, York	do.
Stores	Reigate R D.C.	A. J. Head, Surveyor, 51, High-street, Reigate	do.
Stores	Glasgow and S.W. Ry. Co. ..	R. F. Harrison, Stores Superintendent, Kilmarnock	do.
Wire Fencing	do.	do.	do.
Cast-iron Plates and Jaws	East Indian Railway Co.	C. W. Young, Sec., Nicholas-lane, London, E.C.	do.
Washing Machine, Hydro Extractor, etc.	Warrington Health Committee	Borough Surveyor, Town Hall, Warrington	do.
Mission Hall, Upper Armley, Leeds	.....	Beckwith & Webster, Architects, 2, Basinghall-square, Leeds	do.
Tank Foundation, Contract No. 1, Hyde	Hyde Gas Co.	T. Newbigging & Son, Engineers, 5, Norfolk-st., Manchester	do.
Fireclay Goods	Wilmslow, etc., Gas Co.	W. Severs, Engineer, Gasworks, Wilmslow	do.
*LICENCES TO WORK SIX STEAM DREDGERS	Thames Conservancy	Thames Conservancy Office, Victoria Embankment, E.C. ..	do.
New Games Ground	Braemar Royal Highland Soc.	Jenkins & Marr, C.E., 16, Bridge-street, Aberdeen	Feb. 15
School, Kinross	Kinross School Board	A. Muirhead, Architect, 4, Abbey Park-place, Dunfermline	do.
Redecorating Council Chamber, Town Hall, Ipswich	Corporation	Borough Surveyor's Office, Town Hall, Ipswich	do.
Roads, Lanes, and Sewers, Caerphilly	Mr. T. Gregory	Garth Engineering Works, Caerphilly	do.
Fifty-six Houses, Bedwas-road, Caerphilly	do.	do.	do.
Stores	Bombay, etc., Ry. Co.	T. W. Wood, Sec., Gloucester-ho., Bishopsgate-st. W'out, E.C.	do.
900 tons of Lime	Salford Gas Committee	W. Woodward, Engineer, Gas Offices, Bloom-street, Salford	do.
Materials	Stockport H'ways, etc., Com.	J. Atkinson, Borough Surveyor, Stockport	do.
Paving and Repairing Carriageways and Labour	do.	do.	do.
Road Materials	Mutford, etc., R.D.C.	S. G. Bloy, Surveyor, Oulton Broad, Lowestoft	do.
450 tons of Cast-Iron Pipes	Manchester Corporation	C. Nickson, Gas Department, Town Hall, Manchester	do.
Tarpaving 13,000 yds. super. to Footways	Sutton U.D.C.	C. C. Smith, Surveyor, Municipal Offices, Sutton, Surrey	do.
*HEATING AND VENTILATING APPARATUS	Handsworth Educ. Comm.	Wood & Kendrick, Architects, West Bromwich	do.
Granite	Hardingstone R.D.C.	J. R. Phillips, 2, St. Giles'-square, Northampton	Feb. 16.
One Two-phase Turbo-Generator	West Ham Corporation	A. H. Seabrook, Bor. Elect. Engr., Tucker-st., Canning Town	do.
One 500 K.W. Motor Generator	do.	do.	do.
Switchgear	do.	do.	do.
Partial Installation of Electric Light	Salop Infirmary	J. Jenks, Secretary, Board-room, Shrewsbury	do.
Three Filter Beds, etc., Gagie	Dundee Water Commissioners	G. Baxter, Engineer, 93, Commercial-street, Dundee	do.
Materials and Repairs	Bootle Corporation	Borough Engineer's Office, Town Hall, Bootle	do.
Team Labour	do.	do.	do.
Taking Down Part of Retort House, etc., Gaythorn	Manchester Corporation	C. Nickson, Gas Department, Town Hall, Manchester	do.
Electricity Stores	Rathmines & Rathgar U.D.C.	Electrical Engineer's Office, Rathmines, Co. Dublin	Feb. 17
Stores	do.	F. P. Fawcett, Clerk, Town Hall, Rathmines, Co. Dublin ..	do.
Loanhead Fever Hospital Extension	Lasswade Comm., Midlothian	C. S. S. Johnston, Architect, 66, Hanover-street, Edinburgh	do.
Materials	Withington Com., Manchester	Surveyor, Town Hall, West Didsbury, Manchester	do.
Materials	Salford Electricity Department	Borough Electrical Engineer, Frederick-road, Pendleton	do.
Material and Haulage, Aberdare, Llandaff, etc.	Glamorgan County Council ..	T. Lloyd Edwards, County Surveyor, Town Hall, Bridgend	do.
Oak Fencing Posts for Cemetery	Abertillery U.D.C.	J. M'Bean, Surveyor, 1, King-street, Abertillery	do.
Stores	Darlington Corporation	G. Winter, Borough Surveyor, Town Hall, Darlington	do.
Alterations to Heating Apparatus, Grant Lodge	.....	A. A. Turriff, Burgh Surveyor, Elgin	do.
Sewers in Ward's-road, Elgin	.....	do.	do.
Annual Contracts	Penge U.D.C.	H. W. Longdin, Town Hall, Anerley, S.E.	do.
Heating Apparatus, Stonefield Council School	Bilston Education Committee	Bailey & McConnall, Architects, Bridge-street, Walsall	do.
Materials	Burton-upon-Trent Corp.	G. T. Lynam, Borough Engr., Town Hall, Burton-on-Trent	do.
Road Material and Cartage	Bedfordshire County Council	County Surveyor, Shire Hall, Bedford	do.
Whinstone	Selby U.D.C.	Bruce McG. Gray, Engineer, Town Hall, Selby	do.
Rebuilding Bridge over Barracks Brook, Huntingdon	Hunts County Council	H. Leete, County Surveyor, 36, High-street, Huntingdon ..	do.
Materials and Cartage	Cheshunt U.D.C.	R. H. Jeffes, Engineer, Manor House, Cheshunt	Feb. 18
Kerbing and Paving Footpaths, Fleetville, St. Albans	Hertfordshire County Council	County Surveyor's Office, Hatfield	Feb. 19
Stores	Sheffield Corporation	A. R. Fearnley, Tramways Departmt., Division-st., Sheffield	do.
Stores	Richmond Town Council	J. H. Brierley, Boro. Surveyor, Town Hall, Richmond, Surrey	do.
Works and Materials	Surbiton U.D.C.	Offices of Council, Ewell-road, Surbiton	do.
Flints	do.	do.	do.
Materials and Cartage	Cheshunt U.D.C.	R. H. Jeffes, Engineer, Manor House, Cheshunt	do.
Painting, etc., Interior of Infirmary Annexe, Macclesfield	Committee of Visitors	Parkside Asylum, Macclesfield	do.
Materials and Labour	Rawtenstall Corporation	Borough Surveyor, Municipal Offices, Rawtenstall	do.
Extension of the Building of Cradley Heath Boys' School	Romiley Regis U.D.C.	Pritchard & Pritchard, Architects, High-st., Cradley Heath	do.
Stone for Roads	Beverley Highways Comm. ..	E. Picker, C.E., Surveyor, Beverley	do.
Road Material	Wisbech R.D.C.	A. G. Catling, 4, Post Office-lane, Wisbech	do.
Road Material	Cuckfield R.D.C.	A. Macarthur, Surveyor, Council Offices, Hayward's Heath..	do.
Street Improvement Works, Coedpenmaen	Pontypridd U.D.C.	P. R. A. Willoughby, Engineer, Council Offices, Pontypridd	do.
Street Improvements, Graig, Pontypridd	do.	do.	do.
Painting and Repairs, Premises in Old Gasworks-yard	do.	do.	do.
Painting and Repairs, Public Abattoirs, Tram Road	do.	do.	do.
House, Scartho-road, Grimsby	.....	E. Goodhand, Architect, Osborne-chambers, Grimsby	do.
*ADDITIONS, ETC., TO SCHOOL, ST. ALBANS	Herts County Council	County Surveyor, Hatfield	do.
*LOCOMOTIVE SHED	Coventry Gas Committee	Engineer, Gasworks, Coventry	do.
Sewage Disposal Works	Hemsworth R.D.C.	T. H. Richardson, Surveyor, Hemsworth	Feb. 20
Quarrying and Carting Road Materials	Midlothian County Council ..	Road Office, County Buildings, Edinburgh	do.
Sewage Purification Works, Clatterbridge Workhouse	Wirral Guardians	F. E. Priest, Engineer, 13, Harrington-street, Liverpool	do.
Rolling Stock (100 Covered Steel Goods Wagons, etc.)	S. Indian Railway Co.	H. W. Notman, 55, Gracechurch-street, London, E.C.	do.
210 pairs of Wheels and Axles	do.	do.	do.
Laminated Bearing Springs, No. 420	do.	do.	do.
Sewage Disposal Works, Hemsworth	Hemsworth R.D.C.	T. H. Richardson, Surveyor, Hemsworth	do.
Mortuary, Tilbury	Orsett R.D.C.	S. A. Hill-Willis, Surv., Council Offices, 2, Orsett-rd., Gray's	do.
Sewers, etc., Tilbury Dock	do.	S. P. Adams, 1, Weston-chbrs., Weston-rd., Southend-on-Sea	do.
Annual Contracts	Acton U.D.C.	D. J. Ebbetts, Surveyor, 57, High-street, Acton, W.	do.
*STONE PAVING WORKS	Corporation of London	Engineer, Guildhall, E.C.	do.

CONTRACTS.—*Continued.*

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, etc., supplied by	Tenders to be delivered
Team Labour	Hardingstone R.D.C.	J. C. Sturgess, Surveyor, 13, Lutterworth-road, Northampton	Feb. 21
Road Materials	Headington R.D.C.	J. C. Coates, District Surveyor, Hartfield Cottage, Headington	do.
Haulage of Stone	Salop County Council	A. T. Davis, County Surveyor, Shire Hall, Shrewsbury	do.
Alterations, etc., Pennel Chapel, Pontypridd	The Trustees	W. Jones & W. D. Morgan, Archts., Victoria-chambers, Pontrc	do.
Granite	Bucks County Council	R. J. Thomas, County Surveyor, County Hall, Aylesbury	do.
Materials	Leigh Corporation	T. Hunter, Borough Surveyor, Leigh, Lancs.	do.
Granite, Slag, etc.	Derbyshire County Council	J. W. Horton, County Surveyor, St. Mary's-gate, Derby	do.
Public Library, High-street, Burntisland		W. Williamson, Architect, Kirkcaldy	do.
*RELAYING WOOD FLOORS, EASTERN FEVER HOSPITAL	Metropolitan Asylums Board	Office of the Board, Embankment, E.C.	do.
*PAINTING WORK, GORE FEVER HOSPITAL	do.	do.	do.
Public Baths, Speke-road, Garston	Liverpool Corporation	W. R. Court, Engineer, Municipal Offices, Liverpool	Feb. 22
Lamps and Lamp Fittings	Commissioners of Irish Lights	H. G. Cook, Secretary, Irish Lights Office, Dublin	do.
Reconstruction of Bridge over the Rom, High-street	Romford U.D.C.	H. T. Ridge, Council Offices, Market-place, Romford	do.
Westmorland County Hospital, Kendal		J. F. Curwen, Architect, 26, Highgate, Kendal	do.
*WORKS AND MATERIALS	Hornsey Town Council	Borough Engineer, 99, Southwood-lane, Highgate, N.	do.
*WORKS AND MATERIALS	Islington Borough Council	Town Hall, Upper-street, N.	do.
Aberfan New Girls' and Infants' School	Merthyr Tydfil Educa. Comm.	J. Llewellin Smith, Archt., Central-chbrs., High-st., Merthyr	Feb. 23
*NEW SORTING OFFICE AT TOTTENHAM	H.M. Office of Works	H.M. Office of Works, Storey's-gate, Westminster, S.W.	do.
Repair of Tower of Pirbright Church		W. W. Frost, Secretary, School House, Pirbright, Surrey	Feb. 24
Sewage Disposal, Burbage	Hinckley R.D.C.	S. Preston, Clerk, Church-street, Hinckley	Feb. 25
Sewer Works (Storm Overflow, etc.)	Frinton-on-Sea U.D.C.	E. M. Bate, Engineer, Council Offices, Frinton	Feb. 24
Roadworks	do.	do.	do.
Road Stones	Rowley Regis U.D.C.	Council Offices, Lawrence-lane, Old Hill, Staffs.	do.
Stores and Materials (Highways)	Halifax Corporation	J. Lord, Borough Engineer, Town Hall, Halifax	do.
Stores and Materials (Electricity)	do.	W. Rogerson, Boro' Electrical Eng., Foundry-st., Halifax	do.
Stores and Materials (Tramways)	do.	F. Spencer, Skircoat-road Depot, Halifax	do.
Road Materials	Woodbridge R.D.C.	C. Cook, District Surveyor, Grundisburgh, near Woodbridge	Feb. 27
Road Materials and Cartage	East Sussex County Council	F. J. Wood, County Surveyor, County Hall, Lewes	do.
*EXTENSION OF BRITISH MUSEUM (1ST CONTRACT)	Commrs. of H.M. Works, etc.	Sir Henry Tanner, H.M. Office of Works, Storey's Gate, S.W.	do.
*CHIMNEY SHAFT AT DESTRUCTOR WORKS	Ealing Town Council	Borough Engineer, Town Hall, Ealing, W.	do.
2,500 yds. of 1¼ in. Galvanised Iron Watertubes	Reeth R.D.C.	A. B. Hudson, Clerk, Reeth	Feb. 28
Hospital for Infectious Diseases, Wick		J. Young, County Clerk, Thurso	do.
*BOILER-HOUSE, BOILERS, WATER SUPPLY & HEATING	Lanchester Guardians	Newcombe & Newcombe, Archts., 89, Pilgrim-st., Newc.-T.	do.
*NEW SCHOOLS, DARTFORD	Kent Education Committee	W. Harston, Architect, 8, Hythe-street, Dartford	do.
County Buildings, The Square, Shrewsbury	Salop County Council	A. T. Davis, County Surveyor, Shire Hall, Shrewsbury	Mar. 1
Public Library, St. James-street	Accrington Corporation	W. J. Newton, Borough Engineer, Town Hall, Accrington	do.
6,800 yds. of Sewers, etc., Tellington and Castle Church	Stafford R.D.C.	R. E. W. Berrington & Son, Bank-bldgs., Wolverhampton	do.
Materials and Stores	Exeter Corporation	T. Moulding, City Engineer, Municipal Offices, Exeter	do.
*UNDERGROUND CONVENIENCE, DEPTFORD	Greenwich Borough Council	Borough Engineer, Town Hall, Greenwich-road, S.E.	do.
Supplies	Newton-in-Makerfield U.D.C.	Stores Clerk, Gasworks, Earlestown, Lancashire	Mar. 3
Flagstones, Tubes, Cement, Granite, etc.	Batley Town Council	O. J. Kirby, Borough Engineer, Town Hall, Batley	Mar. 5
*ALTERATIONS TO KITCHEN, BROMLEY ASYLUM	Poplar and Stepney S.A. Dis.	J. & W. Clarkson, Architects, 136, High-street, Poplar, E.	Mar. 6
Enlargement of Wenhaston Council School	East Suffolk Education Comm.	Wallace Ellis, Wenhaston	Mar. 9
Annual Contracts	Shoreditch Borough Council	H. M. Robinson, Tn. Clk., Shoreditch Tn. Hall, Old-st., E.C.	Mar. 13
Pit-stones	Bosmere & Claydon R.D.C.	G. Fiske, Surveyor, Red House, Coddenham	Mar. 15
Bungalow Residence, Ilkley		W. H. H. Marten, Architect, Menston and Bradford	No date.
Infectious Diseases Hospital, Leuchars, Fife	Hospital Committee	J. L. Macpherson, Clerk, Hospital Committee, St. Andrews	do.
Four Houses, York-road, Haxby		Felgate & Hepworth, Architects, 3, Stonegate, York	do.
Timber Jetty, etc., Middleton Beach, Hartlepool	Port and Harbour Commission	Commissioners' Office, Town Hall, Hartlepool	do.
*HIGH SCHOOL FOR GIRLS, CHELMSFORD	Essex Education Committee	F. Wykeham Chancellor, Architect, Chelmsford	do.
*SUPERSTRUCTURE OF NEW COLLEGE BLDGS., CARDIFF	Univ. Coll. of South Wales, etc.	The Registrar, University College, Cardiff	do.
*NEW ELEMENTARY SCHOOLS, STONY STRATFORD	Bucks Education Committee	Harrington, Ley, & Kerkham, 65, Bishopsgate Without, E.C.	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in
*ASSISTANT IN ESTATES DEPARTMENT	Metropolitan Water Board	100*l.* per annum	Feb. 16
*SURVEYOR	Isle of Thanet R.D.C.	200*l.* per annum	Feb. 22
*DIRECTOR OF INDUSTRIAL ARTS CLASSES	Glasgow, etc., Technical Coll.	120*l.* per annum	Feb. 23

AUCTION SALES.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*BUILDERS' SURPLUS STOCK—"Stag" Public House, 94, Wandsworth-road, S.W.	Joseph Hibbard & Sons	Feb. 13
*FREEHOLD PROPERTY—Hackney-road—At the Mart	Field & Son	Feb. 14
*BUILDING SITE, CITY OF LONDON—At the Mart	Jones, Lang, & Co.	Feb. 19
*FREEHOLD PROPERTY, CITY OF LONDON—At the Mart	David Burnett & Co.	Feb. 21
*FREEHOLD BUILDING LAND, ADDLESTONE—Woburn Park Hotel	Waterer & Sons	Mar. 7
*SAW MILL, MACHINERY, PLANT, TIMBER, ETC.—King's-road, Chelsea	J. T. Skelding	Mar. 8, etc.
*BUILDING SITES, CITY OF LONDON—At the Mart	Jones, Lang, & Co.	Mar. 12
*BUILDING SITES, BERMONDSEY AND SOUTHWARK—At the Mart	do.	do.
*BUILDING SITE, HAYMARKET, S.W.	May & Rowden	Mar. 29

* *Those with an asterisk are advertised in this number*: *Competitions*, iv.; *Contracts*, iv. vi. viii. x.; *Public Appointments*, xv.i.; *Auction Sales*, xx. xxviii.

TENDERS.—*Continued from page* 155.

LONDON.—For dredging and removing an approximate quantity of 10,000 cubic yds. from the bed of the River Thames in the vicinity of Vauxhall Bridge, for the provision of a channel 200 ft. wide and 5 ft. deep at low water of spring tides, for the Conservators of the River Thames:—

Flower & Everett* ..... 2s. 9d. per cubic yd.

LONDON.—For making-up the carriageway of Langthorne-street, Fulham, for Fulham Borough Council. Mr. Francis Wood, Borough Surveyor, Town Hall, Fulham, S.W.:—

	Roadway.	Footway.
A. B. Champniss	£570	—
J. Mears	550	—
G. Wimpey & Co.*	530	—
Borough Surveyor*	—	£151

MACROOM (Ireland).—For sewerage works, for the Urban District Council. Mr. A. W. Barnard, C.E. Quantities by Engineer:—

W. Coughlan	£1,700 0 0	D. Collins, Castletown Bere*	£1,020 17 6
O. Connor & Martin	1,680 0 0		

MELTON CONSTABLE.—For alterations and additions to schools, for Norfolk Education Committee. Quantities by the Committee's Building Inspector:—

W. S. Larner, East Dereham £542 2

[Sixteen tenders received.]

PENRYHEOLGERRIG.—For erecting a mixed school for 250 children, for the Merthyr Tydfil Education Committee. Mr. J. Llewellin Smith, architect, Central-chambers, Merthyr Tydfil:—

D. W. Davies, Cardiff* £3,918 5 9

POOL.—For shop and residence at Pool, Cornwall. Mr. Sampson Hill, architect, Green-lane, Redruth:—

J. Roberts, Pool, Carn Brea, R.S.O.* £352

SOUTHSEA.—For extension of pier, for the directors of the Southsea Clarence Esplanade Pier Co. Mr. A. H. Bone, engineer, 148, High-street, Portsmouth:—

R. C. Brebner & Co.	£15,614 0 0
Woodman & Son	14,900 0 0
C. J. Leather	14,365 0 0
Playfair & Toole	14,200 0 0
W. Rigby	14,100 0 0
Muirhead, Greig, & Matthews	13,866 19 7
F. Corke	13,500 0 0
E. H. Page	13,334 4 8
F. Grace	13,175 0 0
W. Hill & Co.	13,069 0 0
H. Lovatt, Ltd.	12,993 19 10
A. Fasey & Son	12,975 5 2
F. Bevis	12,750 0 0
A. Thorne	11,975 0 0
R. H. B. Neal, Ltd., Plymouth*	10,346 0 0

ROCHESTER.—For the erection of the new Technical Institute, for Estates and General Purposes Committee. Messrs. Russell & Cooper, architects:—

—	Foundations.	Superstructure.	Substitution of Ancaster Stone for Bath Stone	—
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
T. D. Graty	1,099 0 0	8,440 0 0	340 0 0	9,879 0 0
J. H. Durrant	1,185 0 0	10,305 0 0	145 0 0	11,635 0 0
G. Gray	1,037 0 0	8,497 0 0	235 0 0	9,769 0 0
S. E. Moss	1,009 0 0	8,744 0 0	500 0 0	10,253 0 0
S. F. Halliday	995 0 0	8,648 0 0	120 0 0	9,763 0 0
Miskin, Ltd.	1,082 2 10	8,434 5 5	300 0 0	9,816 8 3
C. E. Skinner	1,073 0 0	8,315 0 0	490 0 0	9,878 0 0
H. E. Phillips	1,000 0 0	8,700 0 0	400 0 0	10,100 0 0
Wallis & Sons	850 0 0	7,990 0 0	300 0 0	9,140 0 0
Arnold & Son	1,199 0 0	8,795 0 0	101 0 0	10,095 0 0
Gann & Co.	894 0 0	8,297 0 0	290 0 0	9,481 0 0
Johnson & Son	1,087 0 0	8,468 0 0	295 0 0	9,850 0 0
Archer & Son	921 0 0	8,363 0 0	290 0 0	9,574 0 0
G. Browning	998 0 0	8,498 0 0	500 0 0	9,996 0 0
T. Cornelius & Son	951 0 0	8,109 0 0	274 0 0	9,334 0 0
L. Seager	882 0 0	8,182 0 0	343 0 0	9,407 0 0
G. Gates, Frindsbury, Rochester	826 0 0*	8,163 0 0*	50 0 0*	9,039 0 0*
West Bros.	975 0 0	7,950 0 0	275 0 0	9,200 0 0
A. G. Webb	1,090 17 10	9,676 10 8	200 0 0	10,967 8 6
Armitage & Hodgson	1,070 0 0	8,237 0 0	120 0 0	9,427 0 0
Stephens, Bastow & Co.	1,069 0 0	8,747 0 0	194 0 0	10,010 0 0
J. & M. Patrick	909 0 0	8,209 0 0	376 0 0	9,504 0 0

REDRUTH.—For premises, Fore-street, for Messrs. H. T. Williams & Co. Mr. Sampson Hill, architect, Greenlane, Redruth:—

W. C. Hodge	£780	J. Odgers, Redruth*	£719
A. Carkeek	760		

SOUTHWICK.—For new municipal buildings, Lower Shoreham-road, for the Urban District Council. Mr. G. W. Warr, Surveyor, Council Offices, Southwick. Quantities by Surveyor:—

Barnes & Son	£1,776 0 0	Brown & Sons	£1,498 0 0
Hawkins & Sons	1,668 0 0	J. Whittington	1,474 11 11
Woolgar Bros.	1,602 11 9	Peerless, Dennis, & Co.	1,473 0 0
Saunders Bros.	1,599 0 0	Miller & Selmes	1,458 13 0
Cook & Sons.	1,587 0 0	Rowland Bros., Horsham*	1,449 0 0
Baker & Co.	1,577 8 4	H. A. C. Jay	1,432 0 0
G. & F. Foster	1,574 0 0		
Willett & Son	1,562 19 0		
J. J. Cooper	1,545 0 0		
Parsons & Sons	1,527 0 0		

STRATTON ST. MARGARET.—For stormwater bed at outfall works, for Highworth Rural District Council. Messrs. Beesley, Son, & Nichols, engineers, 11, Victoria-street, Westminster, S.W.:—

Streeter & Co., Godalming* £464 5

UXBRIDGE.—For workhouse extensions, Hillingdon East, for the Guardians. Messrs. W. L. Eves & J. Freebairn Stow, architects, Uxbridge:—

Pethick Bros.	£13,475 0 0
W. Irwin	13,233 12 1
Leslie & Co., Ltd.	13,040 0 0
T. Rowbotham	12,999 0 0
T. H. Kingerlee & Sons	12,953 0 0
W. S. Shepherd & Co.	12,931 0 0
Martin, Wells, & Co., Ltd.	12,890 0 0
J. J. Ward & Son	12,753 9 0
J. Wright	12,726 10 10
W. Williams	12,722 0 0
Spencer Santo & Co., Ltd.	12,690 0 0
W. Pattinson & Sons, Ltd.	12,669 0 0
Fassnidge & Son	12,569 0 0
J. E. Johnson & Son	12,544 0 0
G. Godson & Sons	12,487 0 0
S. Page & Sons	12,453 0 0
C. Brightman	12,448 0 0
W. J. Dickens	12,376 0 0
Speechley & Smith	12,322 0 0
C. F. Kearley	12,308 0 0
W. Lawrence & Son	12,244 0 0
A. Hudson & Co.	12,181 0 0
G. E. Wallis & Sons, Ltd.	12,137 0 0
Wisdom Bros.	12,120 0 0
J. Appleby & Sons	12,055 0 0
C. Wall, Ltd.	12,000 0 0
W. Moss & Sons, Ltd.	11,772 0 0
C. H. Hunt & Son, Station Works, High Wycombe*	11,691 0 0
G. H. Gibson	11,267 0 0

SWANSEA.—For erecting fifteen houses in De-la-Beche-road, Sketty, near Swansea, Glam., for the Delabeche Building Club. Mr. C. T. Ruthven, architect, Bank-chambers, Heathfield-street, Swansea. Quantities by the architect:—

T. Richards	£9,439 0 0	Lloyd Bros.	£6,900 0 0
T. Davies	8,711 18 9	C. Marles	6,825 0 0
J. & D. Jones	8,700 0 0	J. Marles & Son, Swansea*	6,710 0 0
S. & T. Weaver	8,400 0 0		
T. D. Jones	8,225 0 0		
R. Lacy	7,065 0 0		

TROEDYRHIW.—For erecting boundary walls and formation of playground, etc., for the Merthyr Tydfil Education Committee. Mr. J. Llewellin Smith, architect, Central-chambers, Merthyr Tydfil:—

D. Jones, Dowlais* £469 1 7

WARMINSTER.—For erecting two villas at Upper Marsh-road, for the Rev. T. Guy Morres and Miss Stuart. Mr. A. F. Long, architect, 53, Market-place, Warminster:—

F. Curtis & Son	£968 10 0	A. L. Ponton, Warminster*	£939 4 8
R. Butcher & Son	965 16 0		
Parsons Bros.	945 0 0		

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